

AN ABSTRACT OF THE THESIS OF

Ellen E. McNeil for the degree of Doctor of Philosophy  
in Education presented on April 26, 1984

Title: PHYSICIANS ATTITUDES TOWARD DEAF PERSONS  
AND THE COMMUNICATION METHODS USED WITH  
THEIR DEAF PATIENTS

Redacted for Privacy

Abstract approved:

~~Tom E. Grigsby / Ed D.~~

The central purpose of this study was to examine physicians' attitudes and communication methods which they used with deaf patients. This study was conducted with 100 physicians practicing medicine in Linn and Marion counties in Oregon.

Attitude was measured by the Attitude Toward Deaf Persons Scale and was compared to demographic information, physician response to statements about communication with the deaf, and the actual methods of communication physicians used with their deaf patients. Analysis of variance, chi square, and a standard t test were utilized for statistical analysis of relationships between attitude and each variable.

Selected conclusions of the study were: 1.) Physicians were found to have generally positive attitudes toward the deaf as scored by the ATD scale. 2.) Physicians who attended a greater number of medical continuing education meetings or who had seen a greater number of deaf patients were found to have a higher incidence of preparedness to communicate with deaf patients. 3.) The communication modes physicians used most often with deaf patients were lipreading, writing notes and gestures or body language. Only 23 percent of the physicians had used a professional interpreter. 4.) A large disparity existed between the physicians' judgement of effectiveness of interpreting and the actual usage of any form of interpreting. Over 90% of the physicians judged interpreting to be an effective communication mode, yet actual usage varied from 12-58%.

Selected recommendations were: 1.) The educational community has a responsibility to provide health care professionals with accurate information about the communication problems of the deaf. Specific topics for inservices were suggested. 2.) Physicians need inservice training pertaining to appropriate communication modes to use with deaf patients and the availability of interpreter services in their local medical communities. 3.) Medical school training should include information on the communication problems encountered with the deaf.

Otolaryngology and emergency room residency programs were targeted for increased training pertaining to deafness.

4.) Deaf students' health vocabulary and information base needs to be examined. School curriculum may need to be developed which encourages deaf persons to take a more informed and active role in their own health care.

PHYSICIANS' ATTITUDES TOWARD DEAF PERSONS  
AND THE COMMUNICATION METHODS USED  
WITH THEIR DEAF PATIENTS

by

Ellen E. McNeil

A THESIS

submitted to

Oregon State University

in partial fulfillment of  
the requirements for the  
degree of  
Doctor of Philosophy

Completed April 26, 1984

Commencement June 1984

APPROVED:

Redacted for Privacy

---

Professor of Adult Education in charge of major

Redacted for Privacy

---

Chairperson of Department of Post-Secondary Education

Redacted for Privacy

---

Dean of Graduate School

Date thesis is presented April 26, 1984

Typed by Patsy Chester and MaryLou McPheeters

for Ellen E. McNeil

## DEDICATION

This thesis is dedicated to the strength within us all that helps us survive difficult times, and to my husband, George, who found the courage to change his life and return to search again for the life and love which we once shared.

## ACKNOWLEDGEMENTS

The investigator wishes to acknowledge the members of the doctoral committee for their direct participation and guidance throughout the thesis preparation:

Dr. Mary Jane Wall, who provided consistent encouragement; Dr. Arthur Gravatt, my graduate representative who was a helpful and active participant; Dr. Kenneth Ahrendt, who gave unequivocal support and guidance; Dr. Harlan Conkey, my mentor and longtime friend; and especially my chairman, Dr. Tom Grigsby, a friend, who in retrospect, had a tremendous knack of being right about dissertations and life.

Much appreciation and gratitude to my family and friends who survived the seven-year process with me: George, Craig, Eric and Katrina Latham; my parents, Charles and Edna McNeil, and my brothers, Earle and Bill, who provided unconditional love and support; graduate school friends: Julie, Linda, Rich and Judy; and my work friends: Debbie, Jay, Gregg, Nancy and Bud.

Special thanks are extended to my friends who gave me the much needed loving support during the last difficult months: Nancy and Jeff Howarth, Mike Volk, Clair Anderson, Karen Malpass, Judy Conkey, Susan Gilmore and Nancy Horner.

This study could not have been done without the assistance of four persons: Dr. George Latham, Dr. Jay Kent, Ms. Mabel Schiffer, and Dr. John Stoner. Great assistance was also given by my excellent typists, Patsy Chester and Mary Lou McPheeters, and my statistician, Suzi Maresh, who all held up through the final sprint.

## TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
Purpose of the Study	4
Major Objectives of the Study	4
Rationale of the Study	5
Limitations of the Study	6
Definition of Terms	7
II. REVIEW OF LITERATURE	9
Communication in Physician-Patient Interaction	9
Health Care for the Deaf Patient	26
Attitudes Toward the Deaf	41
Physician Training in the Area of Deafness	44
Summary of the Literature Review	50
III. RESEARCH DESIGN	53
Introduction	53
Population and Sample	53
Research Procedures	58
Instrumentation	60
Hypotheses of the Study	65
Method of Analysis	66
IV. ANALYSIS AND DISCUSSION OF THE FINDINGS	69
Introduction	69
Hypothesis 1	70
Hypothesis 2	82
Hypothesis 3	106
Hypothesis 4	108
Summary of the Statistical Findings	114
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	117
Summary	117
Conclusions	126
Recommendations for Action	128
Recommendations for Further Study	133
BIBLIOGRAPHY	136
APPENDICES	
Appendix A	142
Appendix B	147
Appendix C	149

## LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Year of Graduation from Medical School of Physicians Who Disagreed with Statements About Deaf Persons, Items 2 and 8	77
2. Practice Specialty of Physicians Who Disagreed with Statements About Deaf Persons, Item 4, "Most deaf persons can understand the basic medical terminology physicians use with patients."	79
3. Age of Physicians Who Disagreed with Statements About Deaf Persons, Item 7, "Exaggeration of lip movements can help the deaf person lipread."	81
4. Communication Techniques Utilized by Physicians Who Have Had Sign Language Experience or Classes	86
5. Physician Judgement of Fingerspelling or Sign Effectiveness in Communication with Deaf Patients	88
6. Physician Usage of Various Communication Modes as Compared to Their Total Number of Appointments with Deaf Patients in the Last Two Years	91
7. Physician Judgement of Gesture and Body Language Effectiveness as a Communication Mode	92
8. Medical Practice Specialty of Physicians Using Interpreting with Their Deaf Patients	95
9. Usage of Sign Language or Interpreting by Physicians with Over Six Appointments with Deaf Patients in the Last Two Years	97
10. Location of Medical Practice of Physicians Using Sign Language or Interpreting with Deaf Patients	99

LIST OF FIGURES (Continued)

<u>Figure</u>		<u>Page</u>
11.	Physician Awareness and Utilization of Interpreter Services	101
12.	Utilization of Writing Notes with Deaf Patients by Physicians Who Used Interpreter Services Contrasted with Physicians Who Felt Interpreters Were Not Needed to Provide Medical Care In Their Setting	103
13.	Sign or Interpreter Usage by Physicians Who Agree with the Statement: "A person who is born deaf has little chance of developing normal speech and language."	104
14.	Physician Judgement of Effectiveness of Various Communication Methods Used with Deaf Patients	110

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Demographic Profile of Respondents Expressed in Percents and Absolute Frequencies	56
2. Attitude Toward Deaf Persons Scale (Part A) Mean Score for Physicians in Study	71
3. ATD Part B: Statements About Deaf Persons Mean Score for Physicians in Study	72
4. Attitude Toward Deafness Score of Physicians as Compared to Their Approximate Number of Total Visits or Appointments by Deaf Patients in Last Two Years	73
5. Statements About Deaf Persons Score of Physicians as Compared to Their Sign Language Experience or Classes	74
6. Statements About Deaf Persons Score of Physicians as Compared to the Approximate Number of Medical Continuing Education Meetings Attended Per Year	75
7. Physician Responses to "Communication with Deaf Patients" Portion of Research Instrument	84
8. Anova Tabulations and Levels of Significance for Physicians, Based on Physicians' Attitudes Towards the Deaf as Compared to Communication Methods Used with Deaf Patients	107
9. Communication Methods Which Met the .05 Level of Significance	112

# PHYSICIANS' ATTITUDES TOWARD DEAF PERSONS AND THE COMMUNICATION METHODS USED WITH THEIR DEAF PATIENTS

## I. INTRODUCTION

"Effective communication about illness and treatment is a critical component of the medical care encounter. The provision of high quality medical care and the insurance of patient satisfaction depend in part upon the ability and willingness of physicians to establish rapport with their patients and to develop effective physician-patient communication."

(DiMatteo & Hays, 1980, p. 18)

Communication skills as well as socio-economic status, race, sexual prejudices, values, lack of information and attitudes are all factors which have been found to influence the physician's clinical judgment and medical treatment decisions (Routh & King, 1972; Lennare & Lennare, 1973; Miller, 1973; Drucker, 1974; Howell, 1974; DiNardo, 1975; Armitage, 1979; Fisher, 1979; Johnson, Guenther, Laube, & Keetel, 1981). Eisenberg (1979) stated that these socio-cultural factors "may affect any type of clinical decision including diagnostic and therapeutic, the decision to admit, and the decision to refer."

The variables which influence the physician-patient interactions may have an even more profound effect on the quality of medical care when the patient

is deaf. Deafness is commonly defined as: the hearing sense being "non-functional for the purposes of everyday living." It is often more narrowly defined as "an inability to hear speech well enough to understand it," and is a condition which affects two million Americans, or one in every 125 persons (DiPietro & Knight, 1982). Prior research studies indicate that this restriction in communication often leaves deaf persons extremely embittered and frustrated with their attempts to obtain adequate medical care (Jordan, 1971; Mueller & Gantt, 1978; Brown, 1980). Baty and Goldstein (1976) quote Magness, of Gallaudet College, who states the anger and dissatisfaction of deaf patients in these words:

I was hospitalized two years ago and I will never forget the experience. I told the doctor I was deaf when he came in to examine me. He said nothing, examined me, and then left the room without a word. Later my wife told me he'd ordered a test that involved injecting a dye into my brain and taking X-rays of my head. I am deaf, but I'm not dumb and I don't like being treated like an idiot. (p. 1)

Lass, Franklin, Bertrand, & Baker (1978) reported that this frustration with communication restraints may be due to the fact that although 94% of the deaf subjects in their study used sign language as their major communication mode, 78% did not use sign language to communicate with their physicians. Twenty-two percent of these adults attempted to use speaking to

interact with their doctors even though only 10% of the deaf population can lipread and a good lipreader can understand less than 40% of what is said (Stein, 1977). Fifty-six percent of the deaf adults in a study by Lass, et al. used writing to communicate. Jordan (1971) notes that because English differs from normal signing, many deaf people have limited vocabularies and poor grammatical skills, therefore limiting the value of written communication.

Physician attitude toward deaf persons may also play a role in the interaction which exists between the doctor and the deaf patient. Brown (1980), a critic of physicians' attitudes toward handicapped persons, feels that part of the attitudinal barrier for physicians is based on a lack of information and the fear of medical failure. He feels that the disabled person may remind doctors of "their imperfect skill." Lattin (1980) comments that "Anyone who has a handicap is perceived to be permanently 'sick' from the point of view of the health care provider."

Criticisms of the physician's role in dealing with deaf patients exist in the literature; however, physicians themselves have not been directly involved in research concerning communication methods used with their deaf patients and how effective they judge these methods to be. Physician attitude toward deaf persons

and possible relationships to communication modes selected are an additional area which research has not addressed.

### Purpose of the Study

The purpose of this study was to examine physicians' attitudes and practices toward the deaf. Specifically, it examined physician's attitudes toward the deaf and the communication methods they used with deaf patients.

### Major Objectives of the Study

The major objectives of the study were to:

1. Review literature related to:
  - A. Communication in the physician-patient interaction
  - B. Health care for the deaf patient
  - C. Attitudes toward the deaf
  - D. Training of physicians in the area of deafness
2. Identify and develop methodology designed to assess:
  - A. Attitudes physicians have toward the deaf
  - B. Communication techniques physicians use with deaf patients
3. Field test the instruments selected and developed
4. Present instruments to a select group of physicians for a pilot study

5. Examine physicians' attitudes and communication practices with deaf patients using the methodology developed.
6. Utilize findings to prepare recommendations for physician preservice and inservice training pertaining to deaf patients

#### Rationale of the Study

Currently there is a void of research and information on health services for the deaf from the physician's perspective. Previous researchers in the area of medical care for the deaf have not interviewed the physicians who treat or potentially treat deaf patients. Rather, the majority of research has concentrated on deaf persons' personal "horror" story accounts of receiving improper care (Hanna, 1976; Baty & Goldstein, 1976; Landers, 1982), gross misunderstandings about their health (Lass et al., 1978; Jordan, 1971), and extreme communication problems (Brown, 1980 and Clark, 1981). A limited number of researchers have actually interviewed deaf adults for demographic and survey information pertaining to their health knowledge, attitudes, and practices (Lass et al., 1978; Schein & Delk, 1980). Lattin (1980) reported that physicians are reluctant to be interviewed or quoted about the treatment of disabled persons. However, Gorski, (1980) stated that without

this direct information and contact with physicians, the elimination of bias in medical services may be a slow and never completely thorough process. As physicians are the primary providers for medical care to the deaf individual, and, therefore, the key to the successful delivery of health services, the physicians themselves must be directly queried about their own role in providing health care to deaf persons.

This study was designed to examine physicians' attitudes and practices toward the deaf. It attempted to provide information which previously has been unavailable, on physicians' attitudes toward the deaf and the communication methods they used with deaf patients.

#### Limitations of the Study

This study was limited in the following ways which may affect the ability to generalize these findings.

1. This study was limited to physicians practicing medicine in Linn and Marion counties in Oregon.
2. The population was limited to physicians attending medical staff meetings in Linn County and to physicians who voluntarily returned a mail survey in Marion County.
3. The measurement of physician's attitudes toward deaf persons was limited to the

reliability, validity and objectivity of the Attitude Toward Deafness Scale.

4. The communication section of this study was limited to physician report of the effectiveness of various communication methods used with deaf patients.

### Definition of Terms

Terms used frequently were:

Ameslan: Ameslan is an acronym for the American Sign Language, the most prevalent form of sign language used by deaf adults in the United States. It is a complete and independent language with its own syntax and grammatical form.

Attitude: Attitude is a predisposition to think, feel, perceive, and behave toward a given concept. In this study the given concept is deafness. Additionally, in this study attitude was defined as the score that a physician received on the Attitude Toward Deafness Scale.

Deaf: When a person's sense of hearing is sufficiently damaged to the extent that it precludes the auditory comprehension of speech, with or without the aid of an auditory device. There is no legal definition of deafness (Schein & Delk, 1974).

Demographic Factors: Information pertaining to the respondent's age, education, practice specialty,

previous contact with deaf persons, and sign language experience.

Interpreter: An interpreter is a member of a profession of persons who simultaneously translates the spoken word into sign language for the deaf person.

Reverse Interpreter: A reverse interpreter translates the sign language expressed by the deaf person into spoken English for the hearing person.

Manual Communication: Manual communication encompasses any combination of communication methods excluding the spoken voice. This may include finger spelling, sign language, gestures, and body language.

Sign Language: Sign language constitutes any standardized form of manual communication in which language concepts are assigned equivalent meanings through hand positions and movements.

Speechreading (Lipreading): To understand oral speech by close observation of the speaker's lips, facial expressions, and gestures.

## II. REVIEW OF LITERATURE

The review of literature related to the topic of this study was conducted in four major areas. The first section of this chapter discusses the role of communication in the physician-patient interaction, while health care for the deaf patient is reviewed in the second part. Section three describes measurements and studies of attitudes toward the deaf and the last section focuses on the training of physicians in the area of deafness.

### Communication in Physician-Patient Interaction

#### Establishment of Rapport Between Physician and Patient

Communication between the physician and the patient is one of the cornerstones of the medical interaction, and often is reported in the medical literature. Often the entry point into the medical system begins with history taking. Zola (1963) reports that every beginning medical student learns that the case history is a major diagnostic tool. Interviewing requires a great deal of skill and understanding. Although there are reasons for reticence and fear for the patient in the initial medical visit, even greater demands are placed on the physician and patient in their attempts to communicate. Meares (1960) agrees with Zola and cautions that communicating with the

patient is something which is much more complex than our traditional concept of history taking. Korsch, Gozzi, and Frances (1978) emphasized that the traditional establishment of rapport provides the patient with the overall framework for the medical relationship. Meares (1960) and Davis (1968) discussed rapport as part of the therapeutic communication with the patient. Davis and Korsch et al. expanded this discussion by stressing that the physician's ability to establish good rapport provides the patient a positive orientation and commitment to the relationship, so that ultimately the patient will follow the physician's advice.

Communication between physician and patient has been the focus of studies addressing patient compliance with medical advice. Davis (1968) in his review of compliance literature found that there is not complete agreement on exactly how the doctor-patient relationship affects compliance, although most investigations do recognize the importance of communication and explanation. Falvo (1968) reported that the physician's behavior in terms of giving information and exhibiting concern for the patient may be linked to patient compliance.

### Benefits of Effective Communication

Effective communication contributes positively to the medical relationship (Pratt, Seligmann, & Reader, 1957 and DiMatteo & Hays, 1980). Pratt et al. give examples of specific benefits and state that patients who receive explanations of their medical problem from their physicians are slightly more likely to agree fully with the diagnosis and treatment plans than those patients who receive negligible information about their condition. Additionally, they found that patients who were given more thorough explanations were found to participate more effectively with the physician and were more likely to accept the doctor's recommendations than those patients who received very little explanation. DiMatteo and Hays (1980) suggest that even the patient's behavior such as appointment keeping is influenced by successful communication with their physician. Furthermore, they note that the patient's extreme anxieties with the medical experience and the detrimental effects on outcome of care which the anxieties may produce, can be reduced by the patient's confidence in the physician.

DiMatteo and Hays (1980) summarize the importance of positive communication interaction with the physician in this statement:

Effective communication about illness and treatment contributes to patients' feelings of being cared for as people and enhances their perceptions of effective socioemotional care. Patients' perceptions of the affective component of the physician-patient relationship are important antecedents to their commitment to the physician, their decisions to turn to nonmedical healers, and even their willingness to institute malpractice litigations against physicians. (p. 18)

### Effects of Poor Communication

Unfortunately, effective communication does not always exist in physician-patient relationships. Butt (1977) indicates that physicians may be aware of and even admit to weaknesses in areas which they may not fully understand or in which they may need updating for new techniques; however, the one area which nearly all physicians feel secure in is physician-patient communication. He further states that it is difficult for him and other physicians to believe that their kindly intelligent discussions, given a patient or member of the family in the office or hospital setting, is not followed nearly to the word. Despite this belief on the part of physicians, there are data available to show that patient interviews with physicians are very unsatisfactory from the patient's perspective. This lack of satisfaction results from the patient's inability to understand what is being

said, and an inability to remember discussions about their own illnesses, drugs prescribed, and the dosages recommended. If a patient cannot understand medical directions, they will not follow them. Butt feels that physicians generally expect patients to remember what they are told and are often surprised to read data suggesting that this expectation is ill-founded. Patients are usually highly motivated; however, they are at a real disadvantage because of the anxiety which they bring to the medical setting, poor health, inexperience in terminology, shortness of the interview, and absence of a way to review what has taken place in the medical interview setting.

The use of medical jargon and its contributions to the breakdown of the doctor-patient communication is criticized by Korsch et al. (1978). Additionally Korsch et al. note that in the hospital and medical setting there are a great many instances where routine stereotypical language is used which may be as obscure to a patient as medical-technical terms. Examples given were words such as "work up," "follow-up" and "history." Deviant communication in the doctor-patient relationship is the central focus of the failure of patients to adhere to medical advice (Davis 1968).

Communication is a major problem in the medical interaction between physician and patient even when the

patient does not have a hearing impairment. Butt (1977) criticizes physicians and indicates that they seem content with their ability to get through to the patient and seem to spend more time thinking about how best to communicate with medical students than with the patient. Objective data cited by Butt indicate that the past and present methods of patient communication have been satisfactory only to the physician. He further stresses the need for the communication gap between the physician and patient to be closed rapidly. In summarizing his 1977 study, Butt noted that compliance was worse with patients who were of the extremes of age, were less educated, poor or who were those with language and cultural barriers. Shuy (1976) reported that physicians appeared to have a critical lack of awareness of the linguistic and cultural systems which some patients bring with them to the medical setting.

#### Communication with the Deaf Patient

Many researchers have noted that the communication barrier posed by deafness is the most significant barrier to health care for deaf patients (Jordan, 1971; Lass et al., 1978; DiPietro, Knight, & Sams, 1981). Depending on the patient's degree of language deficiency, the physician's first encounter with the deaf patient will probably range from frustrating

misunderstanding to utter confusion. Terms which the physician routinely uses may be completely foreign to the deaf patient (Jordan, 1971). In the Lass et al. 1978 study it was found that 44% of the deaf individuals surveyed had problems communicating with their physicians. Because of this communication problem Lass et al. concluded that the deaf patient often needs special attention from the physician in conveying needs and understanding the doctor's inquiries and orders. DiPietro et al. (1981) acknowledge a financial aspect of the communication problem. Physicians who are reimbursed on a fee for service basis may find themselves penalized for the additional time which is often required to obtain a case history or explain a diagnosis and treatment to a deaf patient. If an extra fee is charged for the commensurate time, then it is the deaf patient who is penalized for the additional cost.

The dilemma of the communication problem for the deaf patient appears to be a threefold one: the severe communications problems deaf people have, often create barriers to their awareness of available services and how to use them advantageously; deaf persons who do go to a traditional medical service agency are often frustrated more than helped by personnel who are unable to communicate with them; many staff members may appear

reluctant to work with the deaf because of the difficult and time consuming communications problems involved (Shipley-Conner 1980).

### Communication Modes for Deaf Patients

In surveys of communication modes used with deaf patients, the two most common methods are consistently found to be speech (lipreading by the patient) and writing (Lass et al., 1978; Schein & Delk, 1980; DiPietro et al., 1981). In a 1980 study by Schein and Delk, 70% of the deaf respondents who had been hospital patients reported that writing had been used to convey messages. Fifty-four percent reported using speech and 8% gestures, while only 7% made use of interpreters.

Written communication. It is a revealing statistic that 70% of the time hospital staffs attempt to communicate with deaf patients by using writing. This is in spite of the fact that deaf adults report their major mode of communication to be sign language and that deaf adults average below the fourth grade level on nationally normed tests of reading ability (Schein & Delk, 1980). In many instances, communicating by writing may not be as easy as the physician expects (Jordan, 1971). It is a common misconception that most deaf people can write and read English fluently. Only 12% of deaf adults are fluent in English (Golden & Ulrich, 1978). Jordan (1971)

explains that when a person loses hearing at an early age, it is practically inevitable that there will be some degree of spoken and written language deficiency. Jordan also reported to physicians, that for a deaf person, concepts such as "sharp" and "dull" may have no meaning in the context of describing pain. Additionally, phrases such as "pulmonary infarct," "edema," "carcinoma," and "congestion" far exceed the written vocabulary level of most deaf adults who use sign language as their major mode of communication. It should be noted, however, that the majority of adults deafened in childhood do express confidence in their ability to sign and to read signs (Schein & Delk, 1980).

Speechreading. The use of speechreading in the hospital 54% of the time is not an encouraging statistic. In 1980 the majority of deaf persons surveyed rated their manual communication abilities higher than their speech or lipreading abilities (Schein & Delk, 1980). Golden and Ulrich (1978) report that the public is misinformed in believing that lipreading is an effective means of communication with deaf people. A 1976 publication by Gallaudet College and a survey by Lass et al. in 1978 revealed that only approximately 10% of deaf adults have the ability to lipread well. A further complication is that only

about 40% of the English language is visible on the lips. Under normal conditions deaf people generally comprehend only 30 to 40% of what is said by speechreading (Davenport, 1977). DiPietro and Wyatt (1978) report a visibility index of 30% for lipreading. DiPietro et al. (1981) provide more specific information about the 70% of the English sounds which are either invisible or identical on the lips. The potential for misunderstanding lipreading is obviously great. Such look alike words as chew -- shoe -- Jew -- choose -- juice -- tour -- tool -- two -- are noted as examples. "How do you spell your name?" can look disconcertingly like "How to do you spend your time?" A Gallaudet College pamphlet (1976) provides a striking example of two phrases which look almost identical on the lips, "suffering much" versus "son of a bitch." Additionally, there are situations when lipreading is simply not a possible communication mode. An example is when a surgical mask is worn in the hospital setting (Jordan, 1971). Jordan also provides an excellent account of the frustration of using lipreading in the medical setting. He relates his personal experiences as a deaf patient in this way:

Take my own case. I am what is generally known as a good lipreader. My doctor, like so many others, is of the opinion that since I speak clearly I must lipread equally well. I assure you that his diagnosis is wrong. He hates to write, and I strongly expect that all those stories about doctors' handwriting are true. Many a time I have struggled to lipread him, pretended vast understanding, and then gone home to have my wife call his nurse to find out what the diagnosis was.  
(p.14)

Manual communication. Deaf adults report that gesturing and sign language are used for communication in the medical setting a total of approximately 15% of the time (Schein & Delk, 1980). Of the combined 15%, sign language is used only 8% or less, while Schein and Delk's survey respondents felt overwhelmingly (80.5%) that communication in the medical setting could be improved by the use of an interpreter. Quigley (1965) emphasized the need for the interpreter to be able to interpret the doctor's remarks to the deaf patient as well as to have the ability to restate in intelligible oral language the remarks of the deaf patient (reverse interpreting). At Beth Israel Medical Center in New York, the initiation of interpreter services yielded the positive benefits of improved communication during the delivery of medical services for doctors, nurses, and medical assistants. Communication during medical visits reportedly became shorter, easier, and more relaxed. Medical histories obtained from deaf patients

were felt to be more accurate when interpreter services were used (Burstein & Federlin, 1979).

In the medical setting, appropriate sign language interpreting may be difficult to provide to the deaf patient. Professional interpreters are available in most large cities (Davenport, 1977); however, in 1978, Lass et al. noted that the majority of hospitals and clinics have limited access to skilled interpreters for the deaf. Davenport outlined some of the difficulties in finding a skilled interpreter. A person who has taken a beginning class in sign language often feels they know sign language if they have learned to fingerspell. It takes only about 30 to 60 minutes to learn the manual alphabet (fingerspelling); however, learning Ameslan (American Sign Language) is as difficult as learning French. Ameslan is a visible language where the gestures do the usual work of oral words. Gesture, however, does not refer to random hand motions, but rather to sign language (DiPietro and Wyatt, 1978). Ameslan has its own grammatical system just as French, Chinese, and English do. Word-for-word translation from Ameslan into English may result in poor sentence structure just as similar translations from Swedish may. Sign language is not universal; therefore, due to regional dialects, sign even varies in different parts of our country (Davenport, 1977).

Interpreters. Deaf patients who are frustrated with writing in the medical setting may bring a friend or relative to their appointment as an interpreter (Lass et al., 1978). The difficulty with this, is that relatives of deaf people may not be reliable interpreters (Davenport, 1977). Unless specifically asked to do so, relatives may not translate word-for-word, thus becoming information filters rather than a direct communication mode between the patient and the physician.

Additional problems can occur in the medical setting, where many concepts and terms may be difficult to interpret (Lass et al., 1978). Quigley (1965) feels that in many instances, understanding a direct translation of a medical term should not be expected of the deaf adult. This presents the additional problem of the physician's interpretation of the term into layman's language, which is a process that takes place between the doctor and the interpreter. The interpreter must then translate the lay translation into sign language. Several translations of medical terms which Quigley cites that interpreters use are:

"Addiction" is translated as "get habit can't  
stop"  
 "Allergy" = "not agree your body, oppose"  
 "Induce" = "start, hurry"  
 "Virus" = "germ" "germ inside body,  
cause sick"

English language difficulties. Several key elements contribute to the English language difficulties many deaf adults have. Persons who lose their hearing at an early age will inevitably have some degree of language deficiency (Jordan 1971). That person will not learn the language of his or her hearing community without skillful, conscious, and constant teaching by parents and professionals. Even with this training, most people with the absence of the auditory language experience and its consistent reinforcement will never quite be able to compensate by substituting a visual mode of language acquisition (DiPietro & Wyatt, 1978).

Dr. Wyatt, medical director of Gallaudet College in 1978, noted that there are individual differences in deaf persons just as there are with hearing persons. When research studies control for the specific factors which influence a deaf person's language skills such as age of onset of deafness, level of hearing loss, and educational background, variations in language abilities still will result. How language is acquired is a particularly important factor for the deaf child. For a hearing child, language acquisition begins in infancy and by age five, the hearing child has a 3,000 word vocabulary and a good command of syntax and grammar (Davenport, 1977). In 1977, most deaf adults

over age 40 had not begun school until they were six years old and many deaf children were not starting school until three years of age. Delayed diagnosis of hearing loss was cited as a major problem by Davenport. As a child, the deaf adult may not have had the opportunity to be immersed daily in language at home, as approximately 90% of deaf children have hearing parents. Deaf children with hearing parents have only half as many hours available to learn language as hearing children do. As recently as 1977, only 2 percent of the parents of deaf children were taking the time to learn their own children's language. Additionally, the language learned at school may not include the idioms and words for emotions to describe activities outside the school setting (Davenport, 1977).

As an adult, the deaf patient may view the use of English language very differently than a hearing patient does. For the deaf adult patient, English language use may not be primarily a tool or facilitating device, but rather an obstacle to be overcome and painstakingly used (Moore, 1970). The use of English must be viewed as a second language to deaf adults. Within the deaf community, the basic form of communication is sign language and many deaf persons have not mastered the grammatical fine points of their

second language, English. Most deaf adults have learned to use English and have had speech training but they may find it easier to communicate in their primary language. It is important to realize that this choice to use one's primary language does not indicate a lack of intelligence (Mistler, 1978).

Deaf adults who do have the ability to use English for communication may have poor enunciation and voice modulation. Deaf persons have normal vocal organs and can speak, but because they are not able to hear their own voice and modulate it, their voice will sound different to the listener (Wood, 1981 and DiPietro & Wyatt, 1978). This lack of experience with ordinary speech mechanisms may make the deaf adult verbally unintelligible to the health care provider.

Because much of the deaf child's learning was aimed at language acquisition, the educational environment may have been kept at a more rudimentary level than that of the hearing child (Mueller & Gantt, 1978). This educational dilemma may be why deaf patients seem not to have been taught the more socially acceptable medical words which physicians use (Jordan, 1971). DiPietro & Wyatt (1978) feel that deaf persons do not get the exposure to discussions of health at home, from peers or television presentations, including commercials, and are therefore also unaware of even the

more common terms for describing body parts and body functions. The combined effects of this lack of information and confusion can have a great impact on the ability of the deaf adult to function in a hearing medical system and may also affect their inclination to even seek necessary health care.

Schein and Delk (1980) state that communication must be made available to deaf patients and that to do without adequate communication may jeopardize a patient's health care. They further specify that good communication will contribute to the patient's well being and progress through the recovery period. Schein and Delk summarize communication problems in the medical setting as perceived by deaf respondents to their survey. Respondents listed the following communication problems: writing notes back and forth became tiring (21.4%); did not understand what was being said (16.1%); communication was mostly guesswork and very sketchy (14.3%); hospital staff talked to my relatives but never explained anything to me (13.4%); could not use bed paging system (10.7%); and hospital staff did not understand me (6.3%).

Deaf patients are aware of the communication problem which exist for them in the medical setting. Researchers in medical literature and the area of deafness understand the importance of good

communication in the physician-patient relationship and the impact of poor communication on the provision of appropriate medical care. Physicians remain the key factor in upgrading present communication methods used with deaf patients. Their own perception of the appropriateness of the communication methods currently being used with deaf patients will have an impact on whether or not they are willing to examine these methods and consider change.

### Health Care for the Deaf Patient

#### Introduction

Discussions of health care for deaf patients often include general criticisms of the delivery of services to the deaf and cite case history examples of inadequate health care. Traditionally, the medical profession's orientation towards deafness has revolved around the early diagnosis and treatment of hearing disorders (Lass et al., 1978). Within the health care system, specialists have evolved who aim to identify and diagnose deafness and to offer therapy to remediate conditions of the ear. Additionally, hearing aid evaluations, prevention of hearing losses, special education and rehabilitation have been prominent in the last five years. These specialties deal primarily with only the component of the ear and its dysfunction.

This is only one small part of the health care problem which the deaf patient faces. In fact, the health care system is most frequently asked to provide care for the deaf patient when the patient's complaint is unrelated to deafness (DiPietro et al., 1981).

When the complaint of the deaf patient is not related to their deafness, the health care system has the most difficulty adapting and providing services. Deafness interferes with the relationship between the patient and the physician, and in turn, interferes with the delivery of quality care. Although physicians, nurses, and other medical professionals need not be specialists in deafness to care for deaf patients, they do need to be aware of the communication problems, and adjust the delivery of services to deal with this issue. A review of the literature on the delivery of health care to deaf patients, provides numerous criticisms and case history reports of the current inadequacies in providing these services.

#### Overview of Problems with Delivery of Health Care Services to Deaf Patients

An undeniably important part of health care is communication. Without communication a patient cannot explain the symptoms of his or her illness to the physician and cannot comprehend the regime of preventative medicine (Abbott, 1979). It has been

stated that if all medical patients were dealt with without proper communication, the general population would be outraged; however, hearing impaired individuals face this lack of communication daily when they enter the health care system. This barrier to communication which deafness brings to the medical setting is the single most critical factor affecting health care delivery (DiPietro et al., 1981). Crucial procedures in the medical relationship depend on adequate communication. Obtaining a complete medical history, making a proper diagnosis, explaining standard treatments or rules, or meeting the individual's emotional needs are examples of items upon which an adequate flow of information between the doctor and patient are dependent. In an emergency situation, when time is crucial and patients may be upset or strained, inadequate communication can be dangerous or even fatal (Lass et al., 1978).

For the deaf patient, the communication barrier may begin with admission to a hospital where it is required that admission forms, insurance forms and a medical history be filled out prior to seeing a physician. This burden may be overwhelming to patients who have low reading and writing levels (Baty & Golstein, 1976). The frustration of the communication barrier, which starts at the admissions desk, continues

into examples which may seem relatively simplistic. Often a deaf patient is sedated and prepped for surgery, including eyeglasses being removed, before an explanation of the procedure is given. If the deaf patient relies on lipreading, this would constitute a communication barrier (Hanna, 1976). The use of a surgical mask in the surgery suite is obviously needed by the physician, however, that mask will allow no facial expressions or lip movements to be viewed by the patient. Additionally, deaf people experience communication barriers in the lack of access to the telephone for routine information or emergency care (Abbott, 1979). Many hospitals in smaller towns still do not have a TTY (teletypewriter) available for deaf patients (DiPietro et al., 1981). In the hospital setting the deaf patient may be cut off from the hospital staff by not being able to hear when his or her name is called for admission or treatment. The patient may see others going in for treatment and may feel abandoned (Baty and Golstein, 1976). Once the deaf patient is actually in a room for treatment, an intercom to communicate with the nursing staff is often times totally inefficient. The deaf patient may become exasperated not knowing why someone does not answer the request for help, while the nurse may wonder why nobody

answers when she or he responds to the intercom verbally (Abbott, 1979).

Deaf persons may be given minimal information in the medical setting because it is so difficult to explain procedures to them (Herth, 1974). Unfortunately, because many people believe that poor English skills may indicate low intelligence levels, deaf patients repeatedly suffer the indignity of having hospital staff members treat them condescendingly. Often due to the staff person's frustration or belief that the deaf person would not understand anyway, the staff member simply stops trying to explain concepts to the deaf patient (Golden & Ulrich, 1978). The deaf person who is unable to communicate well with the staff may be labeled as a person who is not considered a good patient, and therefore the hospital staff may become impatient with the deaf person (Hanna, 1976). The member of the deaf community frequently has to take what is offered in terms of medical care, and may have to settle for ineffective health care because they do not understand what is being said to them (Abbott, 1979).

In 1978, the federal government mandated that health, welfare, and social services facilities that employ fifteen or more persons and receive federal funding, must provide interpreters (DuBow, 1979). In

spite of the federal legislation, deaf people continue to lack interpreters in the emergency room and general hospital setting. It is not uncommon for deaf parents to use their hearing child to act as an interpreter, even if the child may be the one who has the injury and is being treated (Brown, 1980). Publicity from a lawsuit in Maryland, concerning the barring of access to an interpreter for a pregnant woman, has resulted in some metropolitan hospitals agreeing to provide and pay for interpreters (DuBow, 1979). Prior to the federal legislation in 1977, Meyers (cited in Lass et al., 1978) stated that the majority of hospitals and clinics have limited access to a skilled interpreter for the deaf.

Without the use of an interpreter, it is often difficult for the physician to obtain an accurate case history. The majority of diagnoses are made from a careful case history with a small amount of the information obtained by laboratory testing. Health care providers who cannot obtain an adequate case history may use an excessive and expensive laboratory approach to diagnose the deaf patient's problem (DiPietro et al., 1981). The lack of an accurate medical history is listed as one of the outstanding problems of the deaf patient (Hanna, 1976). Many deaf patients do not know their own medical histories as the

information interchange between the parent and physician of a deaf child may not include an explanation to the child of what the illness was. It is not unusual for a hearing adult to know the medical history of his or her sibling better than does the deaf sibling. Deaf adults frequently have to write to a parent or school official for information about past medical history and sometimes there is no source of information available (DiPietro et al., 1981). The physician should also be aware of the fact that deaf persons may nod their head in agreement even if they do not understand questions on medical case histories. No matter what mode of communication is used, the health provider should understand that questions should be asked occasionally to determine whether the patient is understanding or simply nodding in agreement for fear of offending the practitioner (DiPietro et al., 1981)

Adequate treatment of illness for the deaf patient assumes the patient will understand what is wrong and will be motivated to follow through with the proper recommendations by the physician. The patient is also expected to answer routine medical questions and learn about the disease which they have. Two way communication between the physician and the patient is essential in establishing appropriate therapy for treatment. Often utilization of medical services by

patients presupposes knowledge about proper hygiene, medical terminology, basic health care procedures and familiarity with common diseases, and the health care system. Because of the limited knowledge of many deaf patients which the communication handicap imposes, the delivery of health care services to the deaf patient is often inadequate (DiPietro et al., 1981).

### Case History Examples of Inappropriate Medical Care

Emergency room. The emergency room setting is most frequently cited as the location where deaf patients have difficulty obtaining adequate medical care. This fact may not be a reflection of the physicians who work in the emergency room setting but rather a reflection of the most common entry point into the medical setting which deaf people select.

Abbott (1979) cites the example of a man who was brought to an emergency room in a major city hospital after suffering the effects of a critical automobile accident. He was unconscious and bleeding profusely and it became apparent that he needed an emergency operation to stop the bleeding. He was searched for identification, and the medical staff discovered a card which identified the man as being deaf and listed his home address and telephone number. The telephone number had the letters, (TTY), after it but this notation made no sense to the staff. They attempted to

contact a family member at the number but received only a series of electronic beeps. The staff members decided to go ahead and do the operation without permission; however, the patient died because the staff did not know that he had a heart condition which made it difficult for him to survive the surgery. If his wife had been contacted, it is possible that more attention to the heart condition may have been used in the operation, therefore, enabling him to survive.

In a second emergency room example a hearing impaired interpreter was called in for a low-verbal deaf man who was hemorrhaging from cancer of the prostate. When the interpreter arrived at the emergency room admissions desk, she was not allowed to go into the treatment area and argued with the staff at the desk. Finally a hearing person from the waiting room area went in to tell the doctor that there was a woman who was evidently an interpreter for the deaf patient at the admissions desk and was very upset because she had not been called in to interpret. Unfortunately, her name had been called on the intercom several times and she did not have sufficient hearing to be able to respond to the request for her services (Baty and Golstein, 1976).

Use of an interpreter is certainly helpful; however, the hospitals must realize that there are

limitations which the interpreter may not be aware of in the hospital setting. Brown (1980) cites the example of a deaf woman in Chicago who was involved in an auto accident and was brought to the emergency room. The hospital did not have an interpreter and even though the woman needed treatment the staff became very frustrated during the communication effort. Finally a note was written to her which said "Come back another day." This is certainly an extreme example of the staff's inability to deal with the problems that communication with a deaf patient presents.

Surgery. Problems in communication continue beyond the emergency room setting into the surgical arena where communication is important to the deaf patient. Hanna (1976) discusses the case of a man who was admitted into the hospital for emergency surgery. After the operation, his right arm was used for intravenous infusion; however, he was righthanded and needed this hand to write with. Additionally, his glasses were put out of his reach on the table along with the pencil and pad he had used to communicate with the nursing staff. The man justifiably became upset in that he needed his sight, with his glasses, to lipread and he needed the pencil and pad to write with as a means of communication. Basic facts such as these seem to escape a staff who have not had inservice or

training about deaf individuals. Hanna also emphasizes that many unfortunate incidents concerning deaf patients seem to occur after they awaken from surgery and are still semi-conscious. A deaf woman who awoke from an operation was in great pain. She attempted to communicate her need for medication but was unsuccessful due to the fact that her writing was unintelligible as she was still groggy from surgery. Hanna feels that many deaf patients have had to endure discomfort and anxiety because they were not able to express their needs. She feels that if interpreters were available, or if the hospital staff could merely anticipate the needs without the requests that patients usually make, this problem may be partially alleviated.

One deaf woman has helped change hospital's attitudes toward providing and paying for interpreters. As a deaf mother-to-be, who had practiced the LaMaze method of natural childbirth, she went to the hospital with her husband and an interpreter when she began to have labor pains. At the last moment, however, her husband and the interpreter were barred from the delivery room and she had to face childbirth alone. Fortunately, her labor pains were a false alarm and the delivery of her child was delayed. She sued the hospital for barring access to an interpreter who could help the couple communicate with the doctor and the

hospital staff. The suit was filed as a violation of Section 504 of the 1978 Rehabilitation Amendments. Subsequently, the hospital agreed to provide and pay for an interpreter (DuBow, 1979). This woman knew how to get legal help and; therefore, she was able to get adequate medical care, but Brown (1980) cites that many disabled do not know their medical rights and are not able to pursue them in this manner.

Hospitalization. Patients who are hospitalized postsurgically may encounter problems based on their lack of understanding in requesting help and on the part on the staff's difficulty in knowing how to communicate effectively with them. Perron (1974) describes a woman who was hospitalized after a cholecystectomy. The nursing staff felt that she was a cooperative person who was interested in participating in her care. She developed pneumonia postoperatively and was not coughing or breathing deeply enough. Apparently the patient did not understand that there would be pain around the incision when she coughed as she was instructed to do. She also did not understand that she could receive pain medication, and was therefore unable to participate as actively as was appropriate. During her hospital stay she also put on her call light for a bed pan and was unable to hear the nurse's response to her auditorally. After a great

period of time she became so anxious that she developed acute chest pain and shortness of breath. By the time a nurse finally came in to check her she required nitroglycerin for a previous heart problem. The next morning she again was restless and apprehensive and a nurse recognized what the problem was. She was then given a small bell and instructed to ring it when she needed someone immediately. This type of solution was helpful for this patient, and helped relieve some of the total isolation which her deafness caused for her in the hospital setting. Perron emphasized that for the deaf patient who is isolated, it is difficult to measure time, and a few minutes can seem like hours when waiting for someone to answer a call light if they are unsure that someone will eventually respond.

Clark (1981) went to visit a deaf friend in a hospital in Seattle. His friend was recovering from cancer and had had surgery. It was evident to Clark that his friend had not understood the ramifications of the surgery and that without an interpreter, was not fully informed about his care. Posted over his friend's hospital bed was a sign which said: "H.O.H., stand close and talk loud." Clark asked his friend if the sign posted over his bed helped and if he understood everything that was going on in the hospital. His friend replied "Oh, most of it," (in sign language) and

went on to say that definitely not all of it, perhaps not even the most important parts. An example such as this shows an obvious attempt by the hospital staff to communicate with the hard of hearing or deaf person; however, it is obvious from this example that many times the staff may simply be uninformed about what constitutes adequate communication.

Medical office. Outside of the hospital setting, deaf patients continue to have difficulties in communicating with physicians. A deaf college professor with his doctorate degree visited an orthopedic surgeon in 1982. At the physician's office he informed the nurse (with paper and pencil) that he was deaf but could read lips if the person would speak normally and face him. The physician came into the examining room and didn't even say hello, he then examined the professor's leg in silence and ordered X-rays. When the films were being developed, the physician returned and informed the professor that his injury was not severe. The patient wrote down a few questions and the physician nodded the answers. The deaf patient obviously felt the physician was in a hurry to get rid of him but he paused to speak to his nurse. The physician's comment which the patient was able to lipread was "It's so hard when they're inarticulate." The patient was stunned that this

statement could be made by a member of the medical profession which supposedly was dedicated to serving human needs. He shared his experience with other deaf people at the university where he taught and learned that this was not an uncommon experience. Landers (1982) summed up this particular individual's experience and feelings by quoting him:

We, the unhearing, deserve no more than the hearing patient, and we deserve the same respective care. We can forgive a little impatience, but not ignorance. (p.2c)

A second example of problems in a medical office setting was cited by Jordan (1971). A deaf man who was an excellent lipreader had established good rapport with his physician. His wife, who was not a good lipreader and could not speak, visited the same doctor for a first visit. That evening when she got home she told her husband that she could not understand why he liked the doctor so much, as her own impression of him had been very negative. He had frowned a great deal and appeared angry when she could not understand him as well as her husband could. She had left the physician's office with a prescription without knowing the diagnosis and without any directions other than those on the prescription. Her husband was quite upset about this and went to the doctor's office the next day. The doctor was out so the husband left a long

note explaining his wife's feelings about the visit. The same evening, the doctor came to the couple's home and apologized. He had not realized how his actions had appeared to the patient. He had been upset by the woman's inability to understand him and had taken refuge in briskness. After a discussion with the couple, the doctor gained a true insight into the situation. After that, both the husband and wife enjoyed a warm rapport with the physician. Jordan emphasized that all deaf patients have not been as fortunate, although, he feels that there is no reason why they shouldn't be.

Difficulties in communication permeate all levels of medical care for deaf patients. Communication problems exist from the often critical entry point at the emergency room, clear through hospitalization and into routine appointments in the medical office setting.

### Attitudes Toward the Deaf

#### Critics of Physician Attitude

The provision of appropriate health care services to deaf patients hinges on changing the attitude of the professionals who work with the deaf. Attitudinal change is the most basic and the most difficult change to make in any medical system (Lattin, 1980). Changing

attitudes can rarely be mandated by law or regulation, and it typically occurs through experience and information about the group with whom the professionals are working. Gorski (1980) states that at the heart of complying to acts which discourage discrimination against handicapped, is the need to change the attitudes of the professional health care workers.

Brown (1980), a strong critic of physician interaction with disabled patients, feels that medical professionals are trained to be objective, which may then become distorted into feeling superior to their patients. He feels that many medical specialists have attitudes that are self-righteous or condescending which manifest as discomfort or prejudice against disabled people. Lattin (1980) remarked that she wonders if the disabled patient somehow represents a medical failure and reminds physicians of their imperfect skill, therefore making them less than comfortable with the disabled patient. The attitudes and reactions of health care workers towards patients are vitally important to the adjustment and rehabilitation of the patient (Rosswurm, 1980).

#### Measurement of Attitudes Toward the Deaf

The Attitude Towards Deafness Scale (ATD), developed by Cowen, Bobrobe, Rockway, and Stevenson (1967) has been used extensively for the measurement of

attitudes toward the deaf, however no studies have focused on health care worker's or physician's attitudes toward the deaf. Cowen et al. developed this scale from an adaptation of the Attitudes Toward Blindness Scale which had originally been constructed by Cowen, Underburg, Verillo (1968).

The ATD has been used by researchers to assess teachers' attitudes toward deaf persons (McQuay, 1978); hearing and deaf students' attitudes toward deaf students (Schroedel and Schiff, 1972); hearing professionals' attitudes toward deaf people with whom they work (Schroedel and Schiff, 1972); hearing students at a deaf college and their attitudes towards deaf students on campus (Emerton and Rothman, 1978); and vocational rehabilitation counselors' attitudes toward their deaf clients (Galloway, 1973).

Findings of studies examining attitudes toward the deaf yield some conflicting information; however, certain trends in the findings do appear to be present. Schroedel and Schiff (1972) found that attitudes towards deafness tended to be neutral or slightly positive across the several populations which they studied. It is interesting to note that the deaf people sampled in their study consistently held more negative attitudes toward deafness than comparable samples of hearing people. Schroedel and Schiff

cautiously suggested the possibility that the attitudes of deaf people may reflect actual experiences with hearing people, while normal hearing persons may not have thought about their feelings toward deafness and may give positive reactions on the test which are subjective in nature. Contact with deaf persons does not necessarily yield a more positive attitude. Miller (1976) found that the presence of a deaf member in the immediate family yields a more positive attitude. In Emerton and Rothman's 1978 study, they found that students entering Gallaudet showed a generally positive attitude toward deaf people, and that six months later the same students showed a decline in their attitude towards other deaf students. Miller (1976) indicated that although contact with deaf persons may not provide a more positive attitude, she did feel that an individual's ability to communicate in sign language with the deaf persons with whom they had contact, may affect attitude in a positive direction. Galloway (1973) found that no relationship exists between the amount of education vocational rehabilitation counselors had and their attitudes toward deafness and deaf persons.

#### Physician Training in the Area of Deafness

Most critics of medical services to the disabled agree that health care providers, including physicians,

want to help the physically handicapped. Health care providers simply lack the training to deal with the disabled or handicapped person as a well person. When this person, who is only temporarily ill, from the same illnesses for which able bodied people are treated daily, comes in contact with a physician, the physician is unable to deal well with problems other than the person's specific disability (Lattin, 1980). Chaney (1975) emphasized this point and stated that in the hospitalization of the disabled person, the nursing staff and technicians are usually aware of the special needs if he or she is hospitalized for the disability; however, when hospitalization occurs for something other than the disability, problems rapidly begin to exist in the care of the patient. Nurses have been found to be lacking in special courses on how to deal with the physically disabled. Chaney questioned why there cannot be courses in physical disabilities just like there are courses in other specialities such as pediatrics. In the dental profession, the problem of dealing with physically and hearing handicapped persons has been examined. In a review of this problem in 1975, the National Conference on Dental Care for Handicapped Americans stated that handicapped persons have been neglected in the dental profession. The reasons being a lack of basic knowledge on dentists'

part regarding the patient and appropriate physical or psychological management and, secondly, a lack of experience in treating this type of patient. These same problems of neglect of the deaf patient and information about deafness would also appear to be present in the medical profession.

Physicians are lacking in training in the area of health care for the deaf, in part, because the disciplines of medicine and education, as they relate to the hearing handicapped individual, have traditionally been considered as separate entities. Fellendorf (1975) comments that this is true both at the training level for university and practicum programs for the preparation of doctors and teachers, as well as at the operational level, which involves schools, clinics, physician's offices, and hospitals. This separation of disciplines is of concern to the deaf patient because it complicates the provision of appropriate total services to that individual. In a keynote address to the American Medical Association in 1970, the speaker told doctors that they know too little about the nature of hearing disorders, psychiatric trauma involved, and life changes that will happen for those who are affected by profound hearing loss (Jordan, 1970). The general public is usually aware of hearing loss as a function of hearing

deterioration with elderly relatives. Physicians have been criticized as possessing this same limited knowledge as well (DiPietro and Wyatt, 1978). DiPietro and Wyatt suggested that while physicians have basic scientific knowledge about deafness, which is provided in medical school, they rarely know more than the organic pathology. They are not taught anything about the problems of treating a deaf patient and the difficulties which may be involved because of the deafness. Jordan (1970) stated that he questioned a young doctor about what he had learned concerning deafness during his training. The physician was apparently able to recall quite a bit about the causes and diagnosis of hearing loss and anatomy of the ear, but could not remember that anything was ever said about the possible problems inherent to the doctor-patient relationship which deafness causes. Many physicians do not encounter deaf patients during their internship and are surprised in their own office settings when they first encounter communication problems with deaf patients. Chapman (1975) noted that most health professionals have perhaps two to three hours out of their total training time devoted to the provision of information about hearing loss. She feels that this causes a lack of awareness of the impact of deafness, and a lack of understanding of the special

communication needs which the deaf patient will bring to the medical setting. Jordan (1970) summarized that the problem of lack of rapport between the doctor and deaf patient seems to lie in the physician's training program and the nonorientation of the medical profession to deafness and its nonmedical complications, including the ever-present communication problem.

A review of the American Academy of Medical Colleges curriculum directory for 1983 revealed that less than one-third of the medical schools in the United States require an ear, nose, and throat course. When a course is required in otolaryngology, then two weeks or less is devoted to the subject and it would include the areas of head, neck, ear, nose, and throat treatment. Baylor College of Medicine in Texas was the only program which offered a combined MD-Ph.D. program in audiology and speech pathology. Baylor also was progressive in offering a clerkship in rehabilitation medicine. Of the programs reviewed, less than 10% listed offerings in rehabilitation medicine which may indicate an orientation toward knowledge about handicapped and disabled individuals. The Oregon Health Sciences University School of Medicine required two weeks in ENT training and did not list courses in rehabilitation medicine.

Telephone contact with the Oregon Health Sciences University School of Medicine Otolaryngology Department, revealed that the Otolaryngology Department is responsible for the medical training regarding hearing disorders that all medical students receive. In Oregon all students rotate through a two-week program of otolaryngology. Of that two-week program, three hours is devoted to a lecture by an audiologist which covers primarily audiological evaluation rather than consideration of communication problems which hearing disorders create. Otolaryngology residents receive much more extensive information in audiology; however, the course schedule for 1983 reported nine sessions in audiological testing and hearing aids, with no mention of communication problems of the profoundly deaf (Oregon Health Sciences University, 1983 and M.B. Gehring, personal communication, September 22, 1983).

Deaf patients need medical professionals who are oriented towards the needs of the hearing impaired and have information, common knowledge, and experience about deafness. Based on the information about physician training it is apparent that doctors are not getting this understanding of deafness in medical school.

### Summary of the Literature Review

The review of the literature indicated that the appropriate provision of medical care to deaf patients is affected by a variety of variables. The major factor, communication in the physician-patient relationship, was shown to be an essential ingredient of adequate medical treatment. It was, however, established in the section on health care for the deaf, that deaf patients rarely get the benefit of having interpreters in the medical setting. Additionally, numerous reports were cited of misunderstanding and confusion in hospitals and clinics. These problems were based on poor communication and a generally inadequate comprehension of the constraints which deafness puts on everyday verbal interactions which are depended on heavily in the health care system.

A review of literature related to attitudes toward the deaf and disabled, established that critics of the current medical system feel strongly that changing attitudes towards disabled persons is the key to achieving basic change in the medical services which handicapped people receive. Physicians have been criticized as being unwilling to participate in programs designed to stimulate attitude change in the medical setting.

Several researchers have used an attitude scale, the ATD, to measure attitude toward deaf persons and deafness. A review of these studies yielded inconsistent information on the role of contact with deaf persons and positive change in attitude; however, the professional group surveyed, Vocational Rehabilitation Counselors, did receive a positive attitude score on the ATD scale. Physicians' attitudes toward deaf persons and deafness have not been examined and therefore a baseline of information about their attitudes and factors affecting it has not been established.

Physician training in the area of deafness was reviewed and found to be very limited. Doctors are taught to deal with the diagnosis or treatment of disability, but have limited experience in dealing with handicapped persons when they want to be seen for problems unrelated to their disability. Regarding hearing, physicians learn about the anatomy of the ear; however, very few have any information about the communication problems that result from a profound hearing loss.

Recommendations have been made to change physicians' attitudes towards the deaf; however, there has been no baseline data gathered on what their attitudes currently are. Communication has been

isolated as a major problem in the physician-deaf patient interaction, yet physicians have not been surveyed as to how they communicate with their deaf patients and how effective they judge this communication to be. Before recommendations can be made regarding proposed changes or additions to the medical curriculum, information needs to be obtained about physician attitude, communication, and contact with deaf patients.

### III. RESEARCH DESIGN

#### Introduction

This study was an investigation of physicians' attitudes and communication practices with the deaf. The purpose of the study was to provide information on physicians' attitudes toward the deaf and the communication methods they use with deaf patients. This chapter provides an overview of the procedures employed in the investigation. Specifically, this chapter includes the following sections:

- 1.) a description of the sample population of the study,
- 2.) steps taken in implementing the research project,
- 3.) the instruments utilized in the research
- 4.) the hypotheses that were tested, and
- 5.) the statistical treatment of the data.

#### Population and Sample

The sample for this research was drawn from physicians practicing medicine in Linn and Marion counties in Oregon.

Physicians attending general medical staff meetings at Lebanon Community Hospital and Albany General Hospital in Linn County were asked to voluntarily complete the research questionnaire while

attending their staff meetings. The 19 respondents from Lebanon Community Hospital filled in the survey instruments after their staff meeting, while 31 of the physicians from Albany General Hospital completed the survey prior to their meeting. In Marion County, the researcher could not gain access to medical staff meetings. Therefore, the research instrument was mailed to 91 physicians whose names were obtained from the Marion County Medical Society mailing list of 352 doctors. The Marion County physicians surveyed were identified by the Marion County Medical Society Executive Director as actively practicing medicine (vs. retired physicians) and as possibly having deaf patients in their practice. Additionally, included in the sample were physicians who were identified as seeing deaf patients by members of the deaf community, the Administrative Educational Assistant at the Oregon State School for the Deaf, (K. Lang, personal communication, September 2, 1982) or by the Oregon Association of the Deaf Directory of Services.

In addition to the survey instrument (Appendix A) the physicians received a letter briefly describing the research and asking for their participation in the study (Appendix B). Recipients of the instrument were requested to return the survey to the researcher in an enclosed, self-addressed and stamped envelope.

A total of 100 physicians responded to the research instrument. Nineteen of the physicians were on the Lebanon Community Hospital staff, 31 were from the Albany General Hospital staff and 50 belonged to the Marion County Medical Society. In the Marion County sample the rate of return for the mailing was 54.9%. Table 1 provides a demographic profile of the 100 physicians who participated in the study.

Table 1  
Demographic Profile of Respondents Expressed  
in Percents and Absolute Frequencies

(N = 100)

Category	Subsets	Absolute Frequencies	Percent
AGE (Mean = 44.63)	25-29	0	0.0
	30-35	17	17.0
	36-40	19	19.0
	41-45	15	15.0
	46-50	16	16.0
	51-55	8	8.0
	56-60	11	11.0
	61-65	4	4.0
	Over 65	10	10.0
YEAR OF GRADUATION FROM MEDICAL SCHOOL (Mean = 1964)	1982-1975	9	9.0
	1974-1970	21	21.0
	1969-1965	18	18.0
	1964-1960	14	14.0
	1959-1955	11	11.0
	1954-1950	10	10.0
	1949-1945	7	7.0
	1944-1940	6	6.0
	Before 1940	4	4.0
PRACTICE SPECIALTY	Anesthesiology	2	2.0
	Emergency Room	6	6.0
	Family Practice	29	29.0
	General Practice	6	6.0
	Internal Medicine	5	5.0
	Neurology	1	1.0
	Obstetrics/Gynecology	6	6.0
	Ophthalmology	5	5.0
	Orthopedics	6	6.0
	Otolaryngology	5	5.0
	Pediatrics	11	11.0
	Psychiatry	3	3.0
	Surgery	4	4.0
	Other	7	7.0
No Response	4	4.0	
APPROXIMATE NUMBER OF MEDICAL CON- TINUING EDUCATION MEETINGS YOU ATTEND PER YEAR (Mean = 6.7)	None	0	0.0
	1-3	17	17.0
	4-5	32	32.0
	6-10	22	22.0
	Over 10	28	28.0
	No Response	1	1.0

Table 1 (Continued)

Category	Subsets	Absolute Frequencies	Percent
DEAFNESS IN FAMILY	Yes	12	12.0
	No	88	88.0
IF YES - RELATIONSHIP	Child	2	17.0
	Parent	1	8.0
	Sibling	1	8.0
	Spouse	0	0
	Other Relative	5	42.0
	Other	1	8.0
	No Response	2	17.0
APPOINTMENTS BY DEAF PATIENTS IN LAST TWO YEARS (Mean = 10.43)	None	11	11.0
	1-2	19	19.0
	3-5	10	10.0
	6-10	18	18.0
	11-15	9	9.0
	16-20	15	15.0
	21-25	6	6.0
	Over 25	10	10.0
	No Response	2	2.0
SIGN LANGUAGE EXPERIENCE OR CLASSES	None	88	88.0
	One class	2	2.0
	More than 1 class	2	2.0
	Know sign language	0	0
	Sign with friend/ family member	1	1.0
	Contact with deaf but no sign	3	3.0
	No Response	4	4.0
KNOW OF PERSON/FACIL- ITY/AGENCY PROVIDING INTERPRETING IN YOUR COM- MUNITY	Yes	54	54.0
	No	46	46.0
IF YES, DO YOU UTILIZE THESE SER- VICES	Yes	18	18.0
	No, deaf patients had interpreter	5	5.0
	No, interpreter not needed to treat	19	19.0
	No, services available in my facility	36	36.0
	No deaf patients in my practice	4	4.0
	No Response	18	18.0

### Research Procedures

To examine the research questions of the study adequately, the following procedures and steps were followed:

1. A review of related literature and research studies concerned with communication in physician-patient interaction, health care for and attitudes toward the deaf and physician training in the area of deafness was completed.
2. A review of existing methodology designed to assess attitudes toward the deaf was conducted.
3. A review of existing instruments yielded an attitude scale which was selected for use and the basis for several additional instruments which were developed to assess communication and demographic information.
4. A field test and critique of the instruments selected and developed was performed by 15 professionals working in the area of hearing impairment and research and development.
5. Revisions were made to the test instruments as a result of the initial critiques.
6. A pilot study, using the selected instruments, was conducted with 12 physicians in Benton

County. It was analyzed and minor modifications were made to the survey instrument as a result of these findings.

7. Permission was obtained from the medical chiefs of staff at Lebanon Community Hospital and at Albany General Hospital to distribute the research questionnaire to physicians attending hospital medical staff meetings. The instrument was distributed to Linn County physicians attending their hospital medical staff meetings.
8. The survey instrument was mailed to physicians in Marion County, as permission could not be obtained to distribute the questionnaire at a medical staff meeting or at a Medical Society meeting. Marion County physicians responding to the survey within three weeks of the mailing were included in the study.
9. The data resulting from the distribution of the instruments in Linn and Marion counties were compiled for appropriate statistical analysis.
10. The results of the analysis were examined, responses to the research hypotheses prepared,

and the findings were summarized for relevant recommendations pertaining to further study and action.

### Instrumentation

A series of four instruments were used to collect the data for this study. The attitude scale selected was a previously developed assessment tool. Additional instrumentation was devised to: assess physicians' knowledge of communication skills with deaf adults; elicit information from physicians pertaining to the communication methods they used with deaf patients and how effective they judge these methods to be; and gather demographic information. The following section reviews each instrument utilized in this study and describes reliability and validity measures as well as modifications to the instruments and the procedures followed for scoring.

#### Attitude Toward Deafness Scale

The Attitude Toward Deafness Scale (ATD) is an instrument which was adopted from the 30 item Attitude to Blindness (AB) Scale, designed by Cowen, Underberg, and Verrillo (1958). Cowen, Bobrove, Rockway and Stevenson (1967) changed items concerning blindness to reflect attitudes toward deafness. Additionally, they wrote 20 new items based on statements from the

literature which alluded to negative or positive attitudes toward the deaf. Their new forms were rated by five judges, all trained in psychology or psychiatry. The statement items were rated as reflecting a positive or negative attitude to deafness. Their judges reached 100 percent agreement on 18 of the items and 80 percent agreement on the remaining two.

The combined 50 item scale was given to 100 psychology students enrolled in extension classes at the University of Rochester. Items were presented in a 4-point Likert-type scale (strongly disagree to strongly agree) with no neutral midpoint. The 25 items receiving the highest discriminating power were selected for the ATD Scale. The resulting ATD Scale is the instrument used in this study. It contains 21 negatively loaded items and four positively loaded items. Appendix C presents the ATD scale items, the item-test correlations, and indications of the directions of the attitudes. The corrected split-half reliability for the final 25-item scale is .83. The resulting scale has been used by researchers to measure attitudes of: hearing students toward the deaf (Blake, 1971), deaf and hearing college students and professionals towards deafness (Schroedel & Schiff, 1971), and rehabilitation counselors toward deafness and deaf people (Galloway, 1971).

In this study, the ATD Scale was used in its entirety with the exception of the two modifications proposed by Galloway (1971). He substituted the term "deaf persons" for "the deaf", as is favored by the National Association for the Deaf. Additionally, the scale was labeled "Opinions about Deafness and Deaf Persons" rather than "Attitudes about Deafness and Deaf Persons." The term, "opinions" was felt to leave more latitude in response and to be less threatening. The professionals who reviewed the research instrument for this study were in agreement with this concept and with the use of the term "opinion." The scale, as it was used in this study, is shown in Appendix A.

The ATD scale is reverse keyed for scoring. Positive items are given a point value of one and negative attitude items are scored with a value of four. Higher scores on the scale indicate a more negative attitude toward deafness. There are 25 items and a maximum score of four points per item, yielding a theoretical range of possible scores from 25 to 100.

#### Statements About Deaf Persons

Literature pertaining to the difficulties of the deaf patient in the medical setting refers repeatedly to communication as the major obstacle (Jordan, 1971; Lass et al., 1978; DiPietro & Wyatt, 1978). To assess physicians' knowledge base of communication skills

among the deaf, nine statements were developed for inclusion in the study. The statements pertained primarily to communication and were drawn from information reported in the literature. Items were obtained from two types of sources, either articles discussing characteristics or medical practices of deaf persons (Golden & Ulrich, 1978; Lass et al., 1978; Schein, 1980; DiPietro et al., 1981) or articles and brochures aimed at informing health-care workers and other professionals about deaf persons (Jordan, 1971; Gallaudet College, 1971; Litton Industries, Inc., 1976; Davenport, 1977; DiPietro & Wyatt, 1978; DiPietro & Knight, 1982).

The items were added to the survey after the ATD Scale as Part B, "Statements About Deaf Persons" (Appendix A). Physicians were asked to agree or disagree with the statements in the same manner as they responded to the ATD Scale. Scoring of this section used the technique employed on the ATD Scale. The six statements which the literature suggests may not be accurate were scored with a one value if the physician disagreed with the statement (items 2,3,4,6,7,8). The three items which the literature supports as accurate (items 1, 5, 9) were reverse keyed and also scored with a one value if the physician agreed with the statement. Higher scores on the scale were viewed as being

consistent with less accurate information about communication with deaf persons. There are nine items and a maximum score of four points per item, yielding a possible range of scores from 9-36.

### Communication With Deaf Patients

Based on the literature concerning communication, which has been previously cited, and on literature expressing dissatisfaction with the communication modes currently used with deaf patients (Jordan, 1971; Golden & Ulrich, 1978; Lass et al., 1978; Schein & Delk, 1980), a section was added to the research instrument designed to assess the communication methods physicians used with their deaf patients (Appendix A).

A descriptive count of the number of physicians who used each of the 15 communication methods was tabulated. Physicians were asked to judge each method as very effective, reasonably effective, or not very effective. These responses were also counted and converted to percentages.

### Demographic Information

In addition to the instrumentation described, respondents were asked to provide demographic information pertaining to age, year of graduation from medical school, practice specialty, number of medical continuing education meetings and contact with deaf

persons and sign language (Appendix A). The questions were similar to those used by previous researchers examining attitudes toward deaf persons (Galloway, 1972; McQuay, 1977; Emerton & Rothman, 1978).

### Hypotheses of the Study

Based on the literature and in an attempt to determine some of the factors involved with physician attitude toward the deaf and communication methods used with deaf patients, the following null hypotheses were formulated and tested:

- HO<sub>1</sub> There will be no significant demographic effect on physicians' attitudes toward the deaf.
- HO<sub>2</sub> There will be no significant demographic effect on the methods of communication physicians use with deaf patients.
- HO<sub>3</sub> There will be no significant relationship between the physicians' attitudes toward the deaf and the communication methods used with deaf patients.
- HO<sub>4</sub> There will be no significant relationship between the communication methods used with deaf patients and the effectiveness of the method as judged by the physician.

### Method of Analysis

The three major statistical tools employed in this study were chi-square, analysis of variance, and a standard t test. Additionally, when the analysis of variance concluded that a significant difference existed in a comparison of factors, then the Student-Newman-Keuls procedure was used to determine the source of the differences. Descriptive statistics were generated from responses to the demographic portion of the survey and the absolute frequency counts and percentages are shown in Table 1 on pages 56 and 57.

#### Chi-Square

Chi-square is a non-parametric statistical test which is selected when the research data are in the form of frequency counts (Borg & Gall, 1979; Downie & Heath, 1974). Chi-square is considered a contrastive (inferential) tool and can be utilized to suggest cause and effect as well as to determine whether two or more frequency distributions differ significantly from each other. A random sample is not a requirement for the use of chi-square.

Chi-square is commonly employed in the analysis of attitude measures, such as the ATD scale which was used in this study. As it is a causal-comparative method, it does not involve manipulation of a treatment

variable, fitting the research design of this study and the limitations of access to physicians as subjects. Chi-square allowed the researcher to examine one group at a time versus each other group, which helped suggest which demographic factors affected physicians' attitudes toward and communication methods used with deaf patients.

### Analysis of Variance

The analysis of variance ("F") is an inferential technique which is selected when two or more sample means are to be compared to determine if they are significantly different from one another (Borg & Gall, 1979). If the analysis of variance determines that the means are significantly different, then an additional test must be done to indicate where the variance exists. In the treatment of data, the Student-Neuman-Keuls procedures was used following a significant "F" ratio in the analysis of variance.

In this study, the analysis of variance was employed to compare specified score categories on the ATD scale and a score on the Statements About Deaf Persons segment of the survey with the variables generated by the demographic information.

### Standard t Test

The t test is commonly used in causal-comparative studies when the mean scores between two groups are being compared (Borg & Gall, 1979). The t test will test the hypothesis statement that two means are not significantly different. In the treatment of the research data, the t test used was a two-tailed test of significance, which allowed the researcher to determine the significance level of differences between the two means in either direction.

In this study, several demographic categories submitted to analysis contained extremely small sample populations. In order to analyze the data, each demographic factor was dichotomized, and a standard t test was used to compare the mean attitude scale scores with the dichotomized demographic elements.

For the purpose of this study, the .05 level of significance was used to accept or reject the null hypotheses.

#### IV. ANALYSIS AND DISCUSSION OF THE FINDINGS

##### Introduction

The purpose of this study was to investigate physicians' attitudes toward, and communication practices used with deaf patients. The sample of persons selected for the research was drawn from physicians in Linn and Marion Counties in Oregon. A total of 100 physicians completed the research instrument and were included in the study. A profile of the sample population is summarized in Chapter III (Table 1 pages 56 and 57).

The data in this research, collected through individual responses to a survey instrument, were analyzed by the use of three statistical procedures. Chi-square was employed in testing each of the hypotheses. In addition, analysis of variance was used to compare specific score categories on the Attitude Toward Deaf Person's scale with the variables generated by the demographic information. A standard t test was used to examine mean scores between groups on the attitude scale. In this study, the .05 confidence level was used as the criterion for accepting or rejecting the null hypothesis. When the computed values were less than the tabular values at the .05 level of significance, the null hypothesis was retained. The null hypothesis was rejected when the computed value was equal to or greater than the tabular value.

The following items are included in this chapter in order to present a concise set of findings:

1. The data, presented within the framework of the basic hypotheses of the study,
2. A rationale for accepting or rejecting each hypothesis, and
3. Insert tables and graphs designed to provide a pictorial representation of findings.

### Findings

#### Hypothesis 1

There will be no significant demographic effect on physicians' attitudes toward the deaf.

For the purpose of this study, physicians' attitudes toward the deaf were measured through the administration of the Attitude Toward Deafness Scale. Possible scores on the instrument range from 25-100, with higher scores on the scale indicating a less positive attitude toward deafness. The mean attitude scores for physicians in this study are presented in Table 2. Physicians in this study had a mean score of 49.4521, which is interpreted as representing generally positive attitudes toward deaf persons.

Table 2

Attitude Toward Deaf Persons Scale (Part A)  
Mean Score for Physicians in Study

No. of Physicians	ATD (Part A) Mean	SD	SE
94	49.4521	7.5616	.7758

A second instrument, Statements About Deaf Persons, was presented to the physicians as part "B" of the attitude section of the research survey. The possible score range on these nine items was 9-36, with higher scores on the scale viewed as consistent with less accurate information about communication with deaf persons. The mean scores for this scale are depicted in Table 3. The mean score for physicians in this study was 22.4148. Scores ranging between 9-18 are interpreted as being consistent with accurate information about communication problems of the deaf, while scores ranging between 19-36 are viewed as representing less accurate information.

Table 3

ATD Part B: Statements About Deaf Persons  
Mean Score for Physicians in Study

No. of Physicians	ATD (Part B) Mean	SD	SE
94	22.4148	2.2482	.2319

Demographic information was compiled for each respondent in the study, and a one-way analysis of variance was computed for each demographic category to determine if differences in attitude scores could be attributed to demographic characteristics of the physicians. The results of this analysis were not statistically significant, in large part due to the small sample size which occurred in several of the demographic categories. Each demographic factor was dichotomized and a standard t test was used to compare the attitude scale score with the dichotomized demographic elements. Chi-square was employed to analyze the significance of demographic variables with the response to the individual items in the Statements About Deaf Persons instrument.

The null hypothesis, "There will be no significant demographic effect on physicians' attitudes toward the deaf," was rejected for the following six demographic factors: number of appointments with deaf patients in

last two years (Table 4); sign language experience or classes (Table 5); number of continuing medical education meetings attended (Table 6); year of graduation from medical school (Figure 1); practice specialty (Figure 2); and age (Figure 3).

Table 4

Attitude Toward Deafness Score of Physicians as Compared to Their Approximate Number of Total Visits or Appointments by Deaf Patients in Last Two Years

	No. of Physicians	ATD Mean	SD	SE
Group 1 (0-5 appointments)	38	51.0687	7.203	1.168
Group 2 (6 or more appointments)	57	47.9969	7.521	.996
Standard t Test P Value (2-Tail Prob.) = .022				

The standard t test yielded a P value of .022 which met the criteria of significance set at the .05 confidence level, therefore the null hypothesis was rejected for this factor.

Discussion: The mean ATD score of physicians who had 0-5 visits or appointments by deaf patients in the last two years was significantly higher than physicians reporting six or more visits or appointments with deaf

patients in the last two years. The higher scores on the ATD scale were interpreted as being consistent with less accurate information about deafness and deaf persons.

Table 5

Statements About Deaf Persons Score of Physicians  
as Compared to Their Sign Language Experience  
or Classes

	No. of Physicians	Mean	SD	SE
Group 1 (no experience or classes)	88	22.5965	2.221	.237
Group 2 (some experience or classes)	8	20.8750	2.031	.718
Standard t Test P Value (2-Tail Prob.) = .037				

The standard t test yielded a P value of .037 which met the criteria of significance set at the .05 confidence level, therefore the null hypothesis was rejected.

Discussion: The mean score for physicians who had no sign language experience or classes was significantly higher than the mean score of physicians who reported having had some form of sign language experience or classes. A higher score was viewed as being consistent with less accurate information about communication with

deaf persons. It should be noted that there were only eight physicians in group 2. The small sample size for group 2 may have skewed the data analysis.

Table 6

Statements About Deaf Persons Score of Physicians as Compared to the Approximate Number of Medical Continuing Education Meetings Attended Per Year

	No. of Physicians	Mean	SD	SE
Group 1 (0-10 meetings per year)	70	22.8116	2.267	.271
Group 2 (10+ meetings per year)	26	21.4875	1.918	.376
Standard t Test P Value (2-Tail Prob.) = .010				

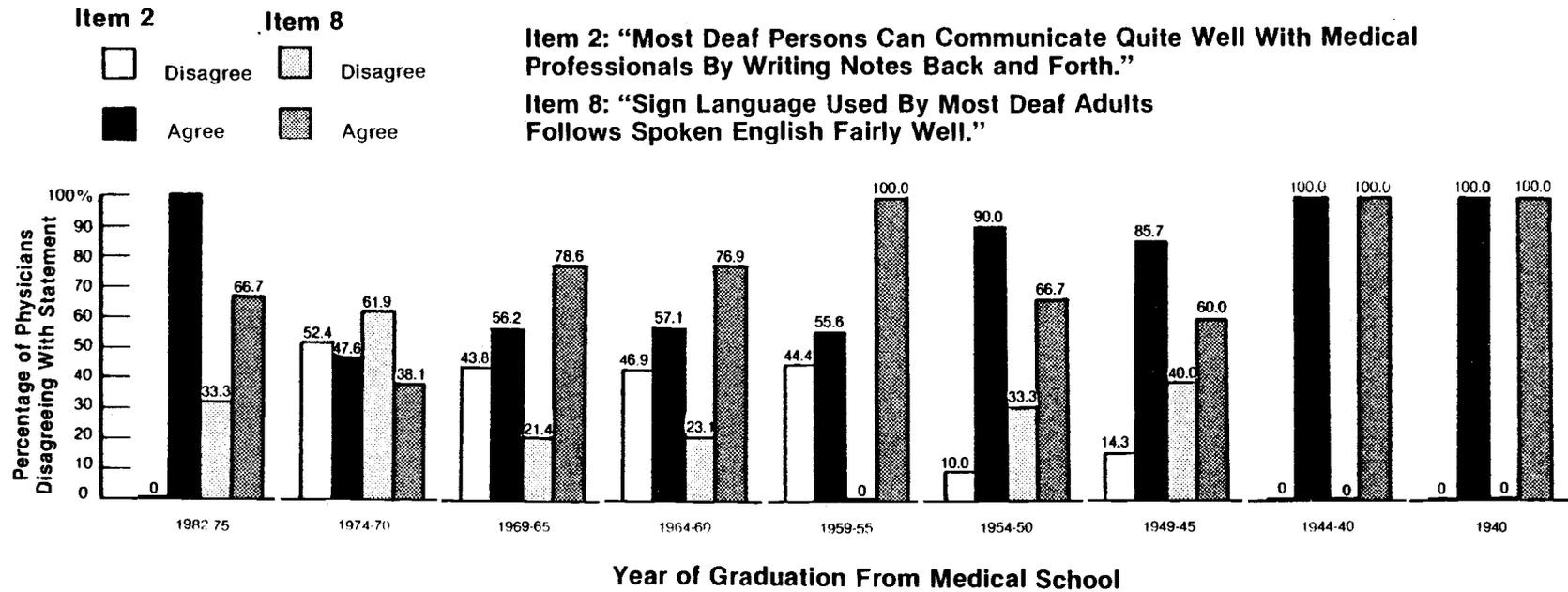
The standard t test yielded a P value of .010 which met the criteria of significance set at the .05 confidence level, therefore the null hypothesis was rejected for this factor.

Discussion: The mean score for physicians attending 0-10 continuing education meetings per year was significantly higher than the mean score of physicians who reported attendance at ten or more continuing education meetings per year. A higher score was viewed

as being consistent with less accurate information about communication with deaf persons.

Adult continuing education research has repeatedly noted that participants in adult continuing education who seek more knowledge in multiple areas of interest will also be more knowledgeable in areas other than just those within the limits of their specific profession. Additionally, an interest in continuing education is viewed as a predictor of future participation in inservice programs (Houle, 1980). This provides a possible explanation as to why physicians who have sought more education, exhibited by more frequent attendance in continuing education meetings, achieved a score which reflected more accurate information about appropriate communication techniques to use with deaf persons.

Physician responses to statements about communication with deaf patients were analyzed by the use of the chi-square statistic. Figure 1 depicts the effect of the physician's year of graduation from medical school upon knowledge of writing and sign language usage with deaf adults.



*Item 2: Level of Significance = .0237*

*Item 8: Level of Significance = .0340*

Figure 1

Year of Graduation From Medical School of Physicians  
Who Disagreed with Statements About Deaf  
Persons, Items 2 and 8

The chi-square statistic was used to examine the relationship between the physicians' year of graduation from medical school and their agreement or disagreement with statements concerning communication methods used with deaf patients. Both items 2 and 8 met the significance level set at .05, therefore the null hypothesis was rejected for these items. The raw chi-square was 17.6812 for item 2 and 16.6509 for item 8, with 8 degrees of freedom. The significance level for item 2 was .0237 and for item 8 it was .0340.

Discussion: Literature on communication with deaf persons by writing notes suggested that item 2 is an inaccurate statement (Jordan, 1971 and Schein & Delk, 1980) and disagreement with it was viewed as reflecting more accurate information about communication with deaf persons in the medical setting. Physicians who graduated from medical school between 1955 and 1974 appeared to have more accurate information about item 2.

Sign language used by most adult deaf persons does not follow spoken English well, and in fact, Ameslan has its own syntax (Davenport, 1977 and DiPietro & Wyatt, 1978). Disagreement with the statement in item 8 was viewed as possessing more accurate information about the sign language used by most deaf adults. On this particular item, the only group in which a majority of the physicians correctly disagreed with this statement

was the 1970-1974 medical school graduates. Physician opinion about deaf persons' understanding of basic medical terminology is graphically represented in Figure 2.

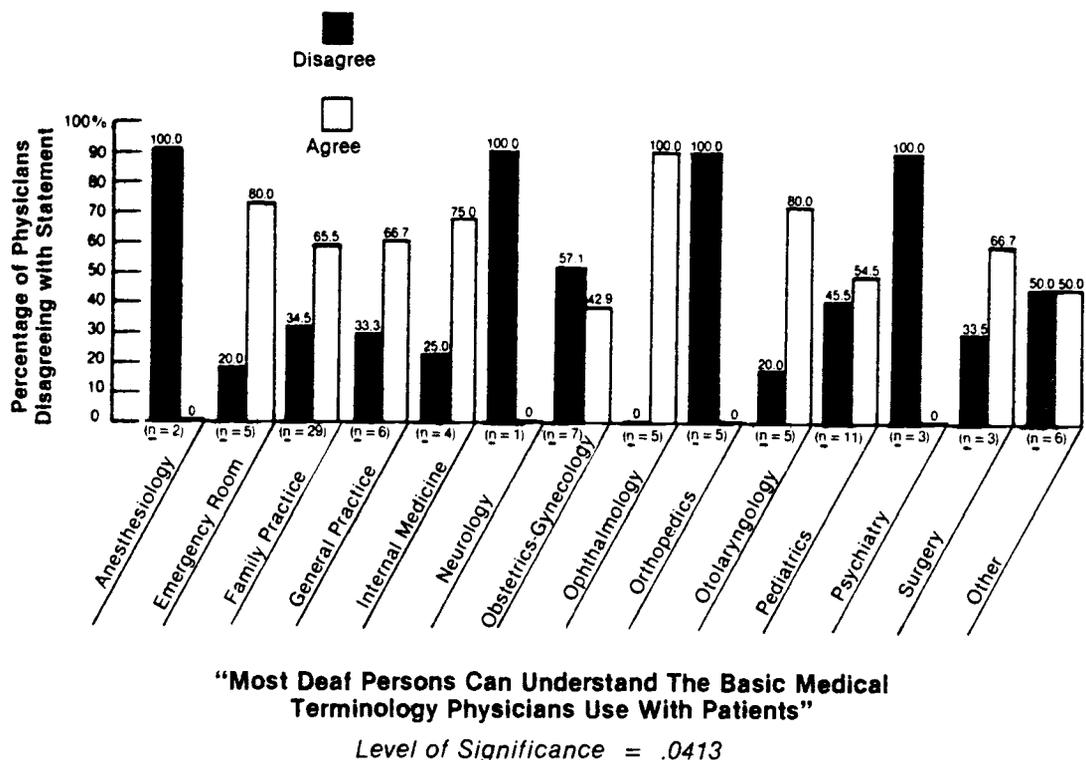


Figure 2

Practice Specialty of Physicians Who Disagreed with Statements About Deaf Persons, Item 4, "Most deaf persons can understand the basic medical terminology physicians use with patients"

The chi-square statistic was used to test the relationship between practice specialty and disagreement with item 4. The raw chi-square was 23.0297 with 13 degrees of freedom. The significance level was .0413,

therefore the null hypothesis was rejected for the demographic factor of practice specialty.

Discussion: Lass, 1978 and Quigley, 1965 provided information which suggested that many deaf persons do not understand the basic medical terminology physicians use with patients. Item 4 "Most deaf persons can understand the basic medical terminology physicians use with patients," is an inaccurate statement. Physicians who disagreed with item 4 were considered to have more accurate information about communication with deaf persons. The sample sizes were small for some specialties; however, extreme differences between the specialties were present. One hundred percent of the Anesthesiologists, Neurologists, Orthopedists, and Psychiatrists disagreed with statement 4. This was viewed as these physicians possessing accurate information about deaf persons' difficulties understanding medical terms. Eighty to 100% of the Emergency room physicians, Ophthalmologists, and Otolaryngologists agreed with the statement. Additionally, two-thirds of the family and general practitioners also agreed with statement 4. This group of physicians represented one-third of the entire research sample. Of the total sample, 50% of the physicians agreed with this statement, which was viewed as inaccurate by deaf adults and researchers.

The relationship between physician age and understanding of the inappropriateness of exaggerated lip movements in communicating with deaf patients was tested by the chi-square statistic. Figure 3 illustrates the findings.

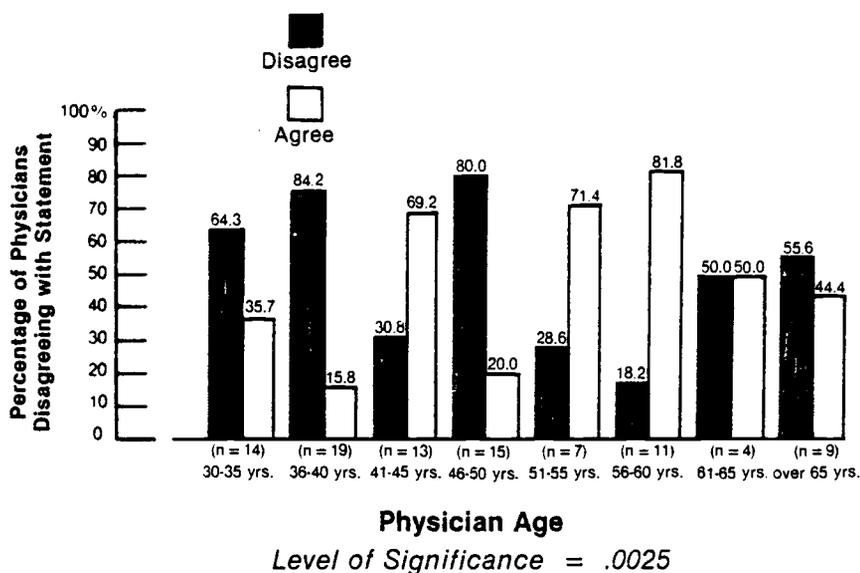


Figure 3

Age of Physicians Who Disagreed with Statements  
About Deaf Persons, item 7, "Exaggeration  
of lip movements can help the deaf  
person lipread"

The raw chi square for this item was 22.0214 with 7 degrees of freedom. The significance level was .0025 which met the criteria of a level of confidence set at .05, therefore the null hypothesis was rejected for the demographic factor of age.

Discussion: The use of lipreading, and certainly lipreading with exaggerated lip movements, as a communication method with deaf adults has been strongly criticized by several researchers (Davenport, 1977 and Lass et al., 1978). Attempting to use lipreading in the medical setting with the deaf, has been named as one of the major contributing factors in the frustration of the deaf, and in the breakdown of effective communication (Jordan, 1971 and DiPietro et al., 1981). Disagreement with the statement, "Exaggeration of lip movements can help the deaf person lipread," was viewed as reflecting more accurate information about communication with deaf persons. An overall trend indicating more accurate information on the part of either the younger or older physicians was not observed; however, the age groups 41-45, 51-55, and 56-60 agreed with this question significantly more often than the other age groups and were therefore viewed as having less accurate information about lipreading.

### Hypothesis 2

There will be no significant demographic effect on the methods of communication physicians use with deaf patients.

In order to determine the methods of communication physicians used with deaf patients, physicians were asked to respond to an instrument designed to assess which communication methods they used and how effective they

judged these methods to be. The physicians' responses for this instrument are summarized in Table 7.

Chi-square was employed to examine the effect of demographic variables on the methods of communication physicians use with deaf patients. The demographics compiled and a complete respondent profile are presented in Chapter III (Table 1 pages 56 and 57).

The null hypothesis was rejected for the following three demographic variables:

1. Physicians had sign language experience
2. Physicians had six or more total visits or appointments by deaf patients in the last two years
3. Physicians used some form of interpreting or sign language in appointments with deaf patients

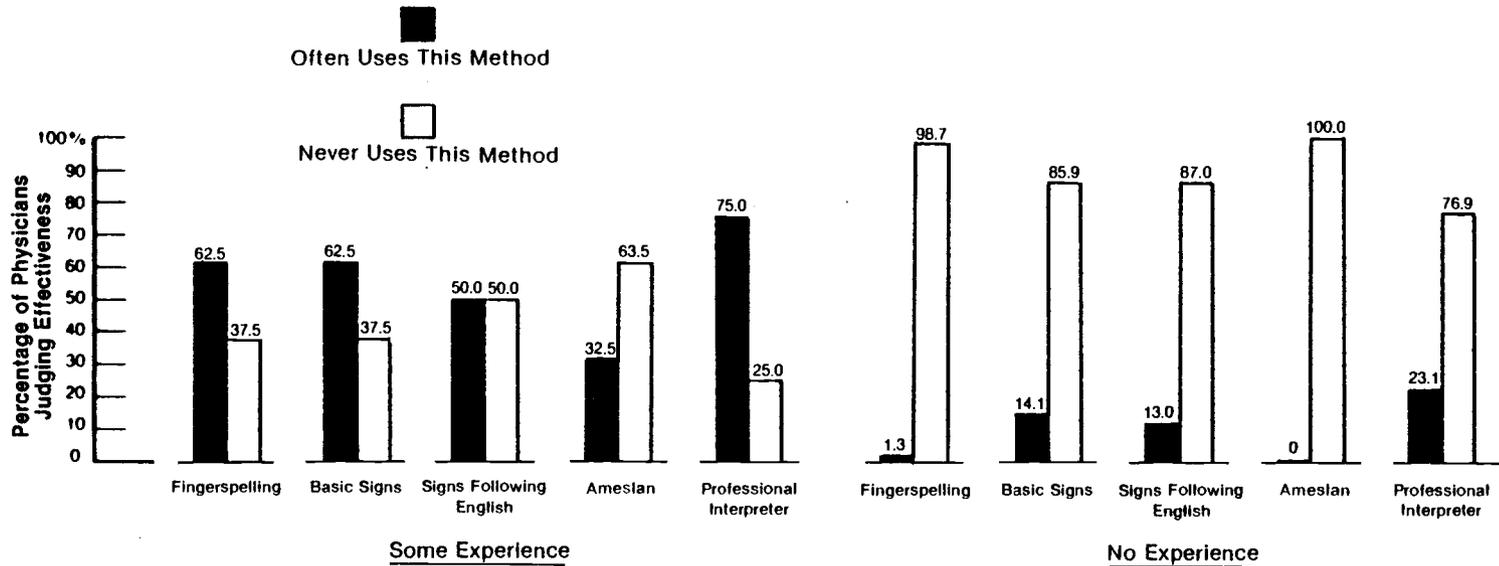
Table 7  
 Physician Responses to "Communication With Deaf Patients"  
 Portion of Research Instrument

	Percentage of Physicians Using Mode Often or Occasionally	Judgement of Effectiveness by Physicians Using Communication Method		
		Very Effective	Reasonably Effective	Not Very Effective
	%	%	%	%
1. Speaking (Lipreading)	.79	.11	.70	.19
2. Talking Louder	.57	.05	.44	.51
3. Writing Notes	.78	.42	.54	.04
4. Gestures, Body Language	.69	.12	.69	.19
5. Fingerspelling	.06	.17	.83	.00
6. Basic Signs	.16	.25	.50	.25
7. Signs Following English	.13	.07	.62	.31
8. Ameslan	.03	.67	.03	.00
9. Child As Interpreter	.37	.32	.65	.03
10. Spouse As Interpreter	.58	.50	.48	.02
11. Parent As Interpreter	.46	.46	.54	.00
12. Other Relative As Interpreter	.46	.41	.57	.02
13. Friend As Interpreter	.55	.50	.48	.02
14. Professional Interpreter	.23	.74	.26	.00
15. Office Staff As Interpreter	.12	.50	.42	.08

Each of these characteristics and the specific significant findings are reported in the following descriptions and figures.

Physicians who had sign language experience or classes used **fingerspelling, basic signs, signs generally following English, Ameslan, and professional interpreters** significantly more often than physicians with no previous sign experience. Figure 4 provides a graphic representation of these findings.

Sign language experience was measured by a response on the demographics to any of the following categories: one sign language class; more than one class; know sign language; signing with friend or family member; contact with deaf persons, however no formal sign language training.



**Physician Sign Language Experience Or Classes**

*Level of Significance: Fingerspelling = .0029  
 Basic Signs = .0041  
 Signs Following English = .0288  
 Ameslan = .0000  
 Professional Interpreter = .0068*

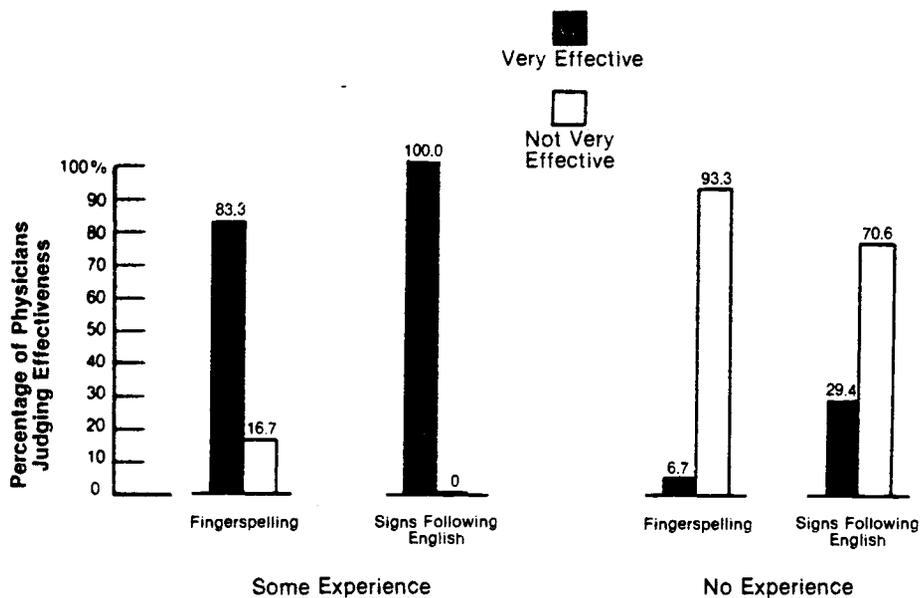
Figure 4

Communication Techniques Utilized by Physicians Who Have Had Sign Language Experience or Classes

The relationship between the physician's previous sign language experience or classes and the selection of communication mode used with deaf patients was tested by the chi-square statistic. The five communication modes discussed and illustrated in Figure 4 were found to meet the criteria for significance set at the .05 level, therefore the null hypothesis was rejected for these methods.

Discussion: The findings suggest that physicians who have had sign language experience or classes were more likely to use some form of manual communication with their deaf patients. Additionally, these same physicians reported that they used a professional interpreter significantly more often than the physicians without previous sign experience or classes. It should be noted that the physician sample was very small for the use of **Ameslan**. Only three physicians had ever used **Ameslan**. It was also anticipated that physicians without previous sign experience may not have even recognized the term **Ameslan**.

Physicians who had previous sign experience or classes judged **fingerspelling** and **signs which generally follow English** to be very effective significantly more often than physicians who had no previous sign experience or classes. These results are shown in Figure 5.



### Physician Sign Language Experience Or Classes

Level of Significance: Fingerspelling = .0029

Signs Following English = .0449

Figure 5

### Physician Judgement of Fingerspelling or Sign Effectiveness in Communication with Deaf Patients

The chi-square statistic was used to test the relationship between physician judgement of effectiveness of specific communication methods and the previous sign language experience or classes of the physician. The chi-square corrected for continuity was 8.8725 for **fingerspelling** with one degree of freedom and a significance level of .0029. The corrected chi-square was 4.0211 for **signs which generally follow English** with one degree of freedom and a significance level of .0449. The significance level values were less than the

.05 level, therefore the null hypothesis was rejected for these communication methods.

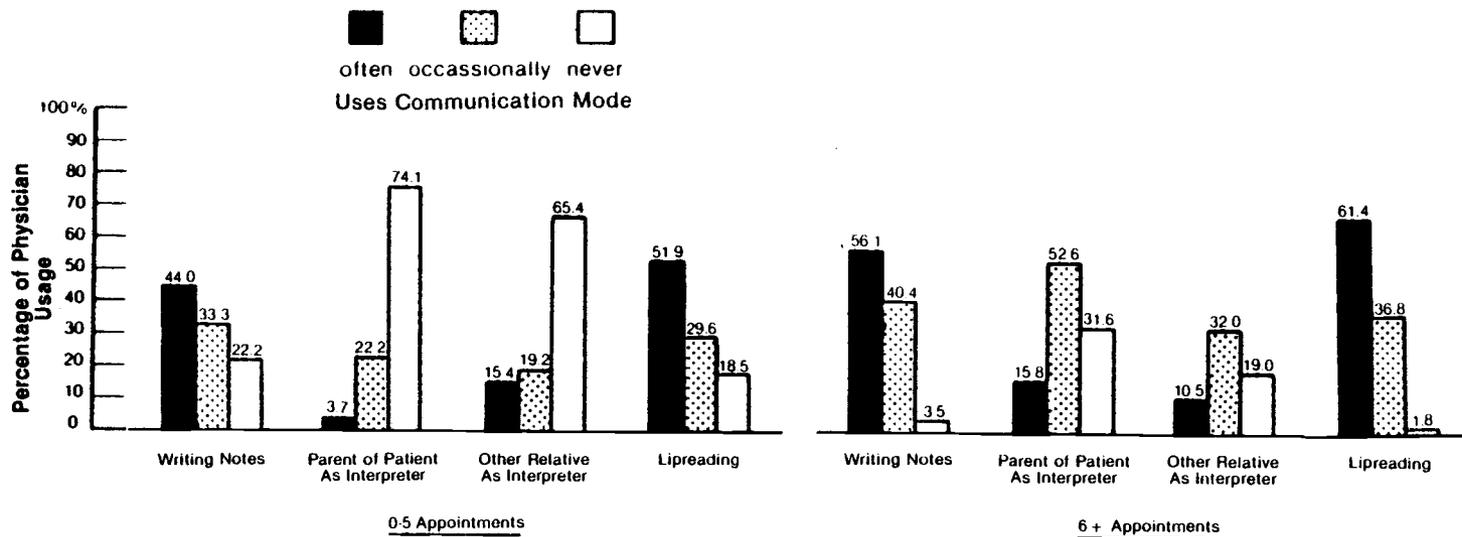
Discussion: A significant relationship was found to exist between the previous sign experience of physicians and their judgement of the effectiveness of **fingerspelling** and **signs which generally follow English**. Physicians with previous **sign language experience or classes** felt that within their medical practices, **fingerspelling** and **signs which generally follow English** were very effective ways to communicate with deaf patients. Physicians without this previous experience felt exactly the opposite, that **fingerspelling** and **sign** were not effective communication methods for their deaf patients.

The relationship between the number of appointments with deaf patients and the communication methods used by the physician was tested by the chi-square statistic. These findings are reported in Figure 6.

The raw chi-square for **writing notes back and forth** with patients was 7.4521 with 2 degrees of freedom and a significance level of .0241. Using the **parent of the patient as an interpreter** had a raw chi-square of 13.5148 with 2 degrees of freedom and a significance level of .0012. The raw chi-square for using a **relative as an interpreter** was 10.0354 with 2 degrees of freedom. The significance level was .0066.

**Lipreading** usage was found to have a raw chi-square of 7.7711 with 2 degrees of freedom and a significance level of .0205. The significance levels for these four communication methods was less than .05, therefore the null hypothesis was rejected for each of these modes.

Discussion: Physicians who had six or more total visits or appointments by deaf patients in the last two years used **writing notes** and **parent of patient** or **other relative as interpreter** more often in appointments with their deaf patients than physicians who had less than six total visits or appointments. Physicians with 0-5 total visits or appointments by deaf patients were found to use **speaking to patient (lipreading)** as a communication mode with their deaf patients significantly more often than the physicians who reported six or more total visits or appointments by deaf patients.



**Approximate Number Of Total Visits Or Appointments To Physician By Deaf Patients In Last Two Years**

*Level of Significance: Writing Notes = .0241  
 Parent as Interpreter = .0012  
 Other Relative = .0066  
 Lipreading = .0205*

Figure 6

Physician Usage of Various Communication Modes As Compared to Their Total Number of Appointments with Deaf Patients in the Last Two Years

Additionally, physicians who had six or more total appointments by deaf patients in the last two years were found to judge **gestures and body language** to be a very effective communication mode significantly more often than did the physicians with fewer than six appointments. Figure 7 illustrates this finding.

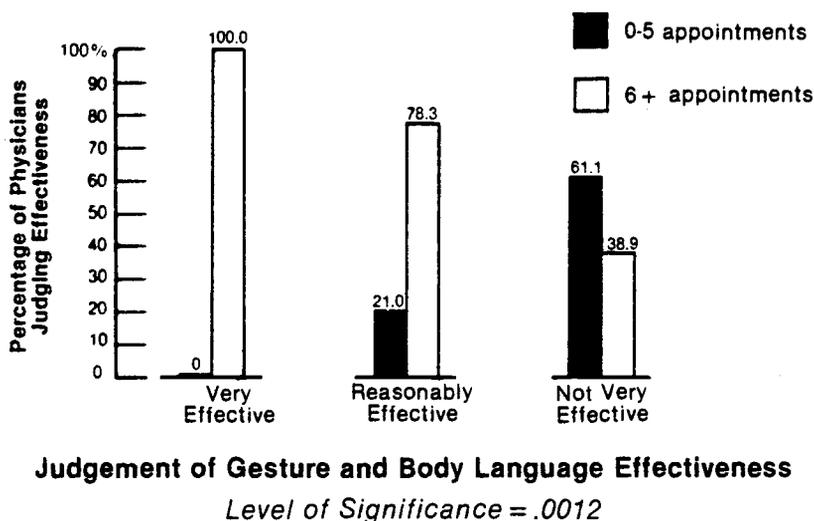


Figure 7

Physician Judgement of Gesture and Body Language Effectiveness as a Communication Mode

The chi-square statistic was used to test the relationship between the number of appointments with deaf patients and the physician's judgement of effectiveness of **gesture and body language** as a communication mode. The raw chi-square was 13.4132 with two degrees of freedom. The significance level was .0012, therefore the null hypothesis was rejected for this relationship.

Discussion: Physicians who have had more exposure to deaf patients apparently found that **gesture and body language** did help them communicate with their deaf patients. The physicians with fewer contacts with deaf patients felt that **gesture and body language** were not very effective for them in communication with their deaf patients.

There were a number of factors which characterized the population of physicians who were more likely to use some form of interpreting in appointments with their deaf patients. These factors were: any medical specialty except psychiatry and the category other; physicians with a deaf child, relative or spouse; physicians with six or more appointments with deaf patients in last two years; and physicians practicing in Marion County.

The use of some form of interpreting was assessed by a positive response on the Communication with Deaf Patients portion of the survey to any of the items numbered 9-15 (**Child in family as interpreter, spouse of patient as interpreter, parent of patient as interpreter, other relative as interpreter, friend as interpreter, professional interpreter, office staff member as interpreter**).

Physicians who used either some form of interpreting or some form of sign language in appointments with their deaf patients were identified by the

same demographic characteristics as physicians who used only some form of interpreting.

The use of some form of sign language or some form of interpreting was assessed by a positive response on the communication with deaf patients portion of the survey to any of the items numbered 5-15 (fingerspelling, some basic signs, signs which generally follow English, Ameslan, American sign language, child in family as interpreter, spouse of patient as interpreter, parent of patient as interpreter, other interpreter, office staff member as interpreter).

The influence of medical specialty on use of interpreting was tested by the chi-square statistic. Figure 8 provides an illustration of the findings.

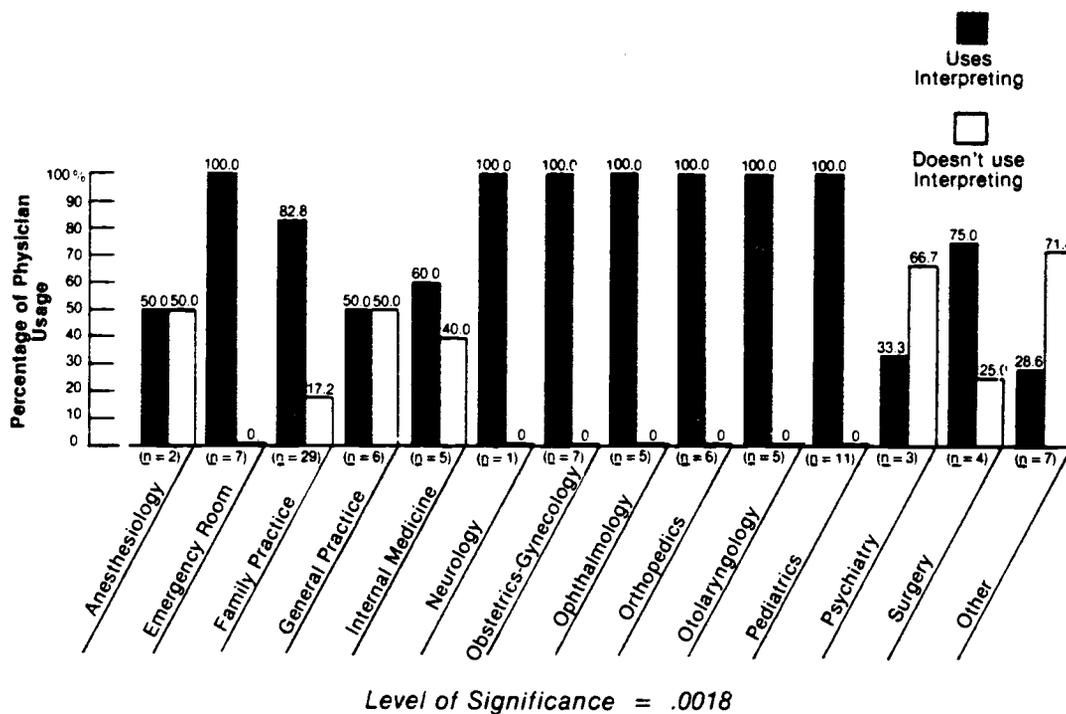


Figure 8

### Medical Practice Specialty of Physicians Using Interpreting With Their Deaf Patients

The chi-square statistic was used to test the relationship between medical specialty and interpreter usage. The raw chi-square was 32.8440 with 13 degrees of freedom. The significance level was .0018, therefore the null hypothesis was rejected for medical practice specialty.

The analysis of the data concerning the influence of medical specialty on the use of interpreting or sign language was different for only one practice specialty, psychiatry. In this group 33.3% of the physicians used

interpreting or sign and 66.7% did not. The raw chi-square was 31.19549 with 13 degrees of freedom and a significance level of .0032. The null hypothesis was rejected for the influence of practice specialty on physicians' usage of sign language or interpreting.

Discussion: In several specialty areas 100% of the physicians in the sample used some form of interpreting in communication with their deaf patients. The majority of psychiatrists did not use interpreting. One possible explanation is that they may have viewed interpreters as an information filter which could interfere with the confidentiality of the deaf patient.

The small sample size for several specialties such as neurology, anesthesiology and psychiatry could have had an effect on the results obtained and the conclusions drawn.

Data generated from responses of physicians with a deaf family member were analyzed. Only nine physicians were found to have deaf relatives. These physicians represented less than 10% of the research population; therefore, it was felt that the results were not reliable and that no conclusions could be drawn which could be generalized to a larger population base.

Physicians who have had six or more total appointments by deaf patients in the last two years reported that they had used sign language or an

interpreter in appointments with deaf patients more often than did the physicians who had a total of 0-5 appointments. Figure 9 illustrates these findings.

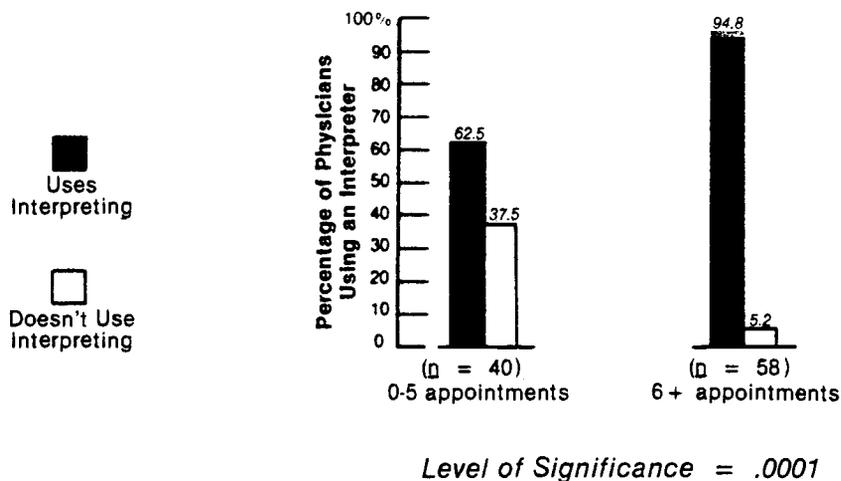


Figure 9

Usage of Sign Language or Interpreting by Physicians  
With Over Six Appointments With Deaf Patients  
In the Last Two Years

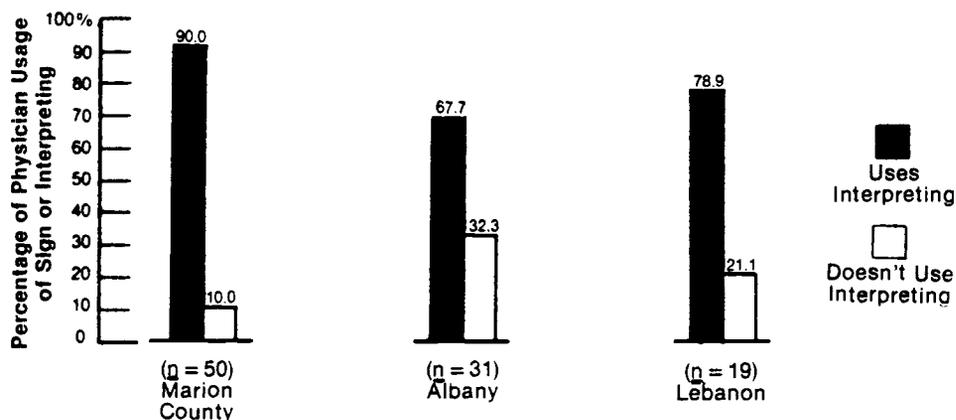
The chi-square statistic was used to test the relationship between physician usage of sign language or interpreting and the physician's total number of appointments with deaf patients in the last two years. The chi-square corrected for continuity was 14.4149 with one degree of freedom. The significance level was .0001, therefore the null hypothesis was rejected.

Chi-square was also used to analyze the relationship between interpreter usage alone and the number of medical appointments. The findings for this analysis were identical to those shown in Figure 9 for physicians who

had six or more appointments with deaf patients in the last two years. Physicians with under six appointments used interpreting 60% of the time and did not use interpreting 40% of the time, a finding similar to findings for the combination of sign language or interpreter usage. The chi-square corrected for continuity was 16.21216 with one degree of freedom. The significance level was .0001. The null hypothesis was rejected for the influence of total number of appointments on the physician's choice of communication mode with deaf patients.

Discussion: Physicians who had more frequent contact with deaf patients reported using either interpreting alone or sign or interpreting more often in their appointments with deaf patients. Physicians who had seen more deaf patients may have recognized a need for sign or interpreting, or the deaf patients themselves may have brought the interpreters with them to their medical appointments.

Physicians practicing medicine in Marion County used some form of sign language or interpreting in appointments with their deaf patients more frequently than did the physicians sampled for the cities of Albany and Lebanon. Figure 10 provides a graphic description of these findings.



**Location of Physician's Practice**

*Level of Significance = .0445*

Figure 10

Location of Medical Practice of Physicians  
Using Sign Language or Interpreting  
with Deaf Patients

The chi-square statistic was used to test the strength of the relationship between the communication methods physicians used with deaf patients and the location of their medical practice. The raw chi-square was 6.22425 with two degrees of freedom. The significance level was .0445, therefore the null hypothesis was rejected.

Chi-square was also used to test whether a relationship existed between the use of interpreting alone and the location of the physician's practice. The findings were identical to the findings for the use of either sign or interpreting for Marion County and Albany.

In Lebanon 73.7% of the physicians used interpreting and 26.3% did not, which was similar to the Lebanon findings reported in Figure 10. The raw chi-square for this finding was 6.50997 with two degrees of freedom. The significance level was .0386, therefore the null hypothesis was rejected.

Discussion: Physicians in Marion County used sign language or interpreting in contacts with deaf patients more frequently than did physicians from the other two sample sites. The state school for the deaf is located in Marion County and the population of deaf persons is much greater in Marion County than in Albany or Lebanon. It is possible that physicians from Marion County experienced more frequent contacts with deaf adults on a daily basis and more media exposure to deafness than physicians from the other two areas. Deaf adults in Marion County may have had more access to interpreters and may have chosen to bring someone to interpret for them to medical appointments more often than deaf adults in Albany or Lebanon.

Physicians who used sign or interpreting with their deaf patients were found to be more aware of interpreter services and to utilize these services more often than the physicians who did not use sign or interpreting with their deaf patients. Awareness of interpreter services was measured by a positive response to demographic

question number eight: "Do you know of a person, facility or agency in your community that provides services in sign language interpreting for deaf persons?" Figure 11 depicts physician awareness and utilization of services.

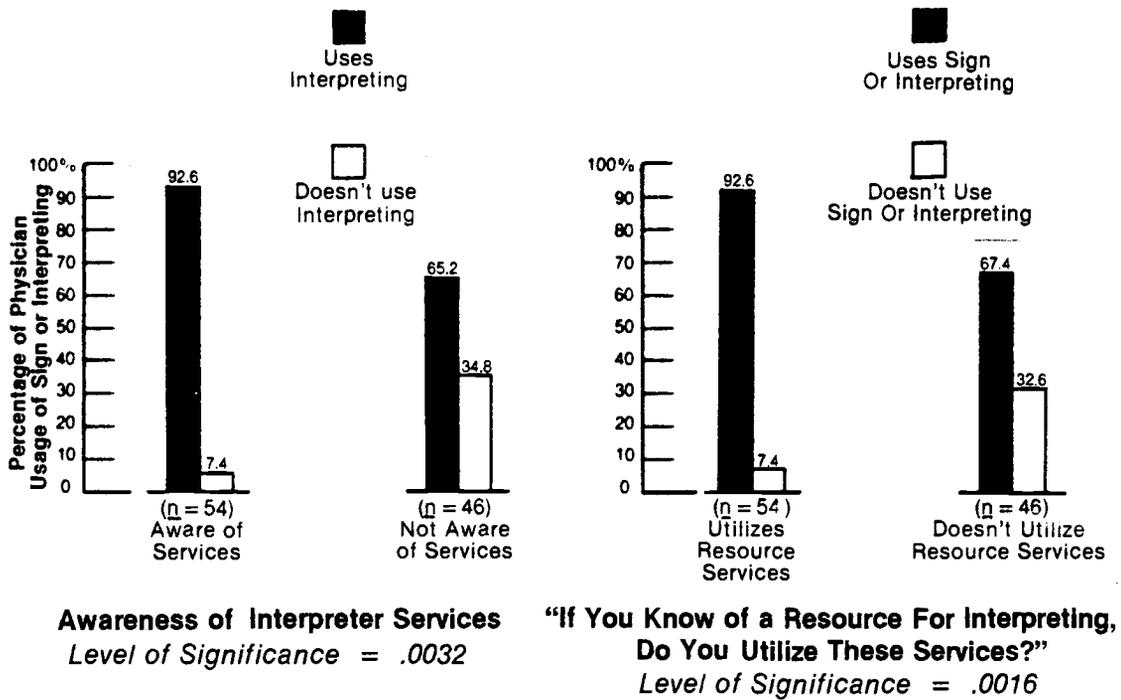


Figure 11

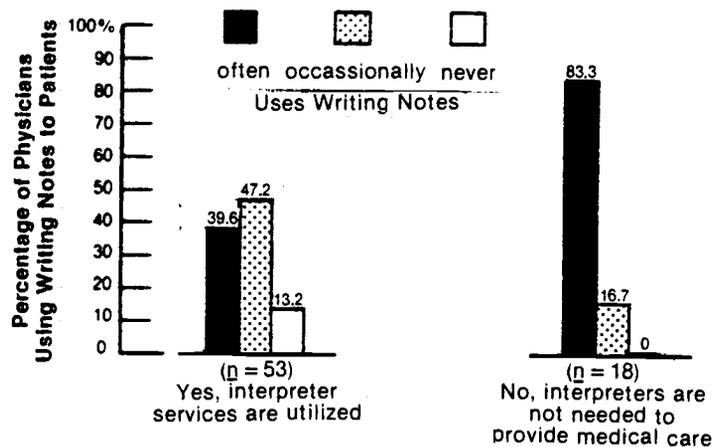
### Physician Awareness and Utilization of Interpreter Services

The chi-square statistic was used to test the relationship between physician usage of sign or interpreting with deaf patients and their awareness of interpreter services in their community. The chi-square corrected for continuity was 8.6787 with one degree of freedom. The significance level was .0032, therefore the null hypothesis was rejected.

The chi-square statistic was also used to test the relationship between physician usage of interpreting and their utilization of community interpreter services. The chi-square corrected for continuity was 9.98641 with one degree of freedom. The significance level was .0016, therefore the null hypothesis was rejected.

Discussion: Physicians who used sign or interpreting with their deaf patients also were aware of community resources for interpreting services. Physicians who used interpreting as a communication mode with deaf patients also tended to utilize available community interpreter resources significantly more often than physicians who did not use interpreting in their practices. Among the physicians who were aware of community resources, but chose not to use resources, 65.2% reported using some form of interpreting in their practice. Among physicians who utilized community interpreter resources, 92.6% used interpreting in their practices.

Physicians who were aware of a community resource for interpreting but felt that interpreting was not needed in their setting to provide medical care for deaf patients used writing notes back and forth to deaf patients significantly more often than did physicians who utilized interpreter services. Figure 12 illustrates this finding.



*Level of Significance = .0050*

Figure 12

Utilization of Writing Notes With Deaf Patients  
 by Physicians Who Used Interpreter Services  
 Contrasted with Physicians Who Felt  
 Interpreters Were Not Needed to  
 Provide Medical Care  
 In Their Setting

The chi-square statistic was used to test the relationship between physician usage of note writing as a communication mode and the utilization of community interpreter services. The raw chi-square was 10.61066 with two degrees of freedom. The significance level was .0050, therefore the null hypothesis was rejected.

Discussion: Physicians who reported in the demographic portion of the survey that they did not need to use interpreter services to provide medical care for their deaf patients were found to write notes to their

deaf patients significantly more often than physicians who used interpreter services.

Physicians who reported that they used interpreting with their deaf patients were found to have more accurate information about the development of normal speech and language in persons who are born deaf than physicians who did not use interpreters. This information was obtained by agreement with "Statements About Deaf Persons," item number one: "A person who is born deaf has very little chance of developing normal speech and language." Figure 13 illustrates this finding.

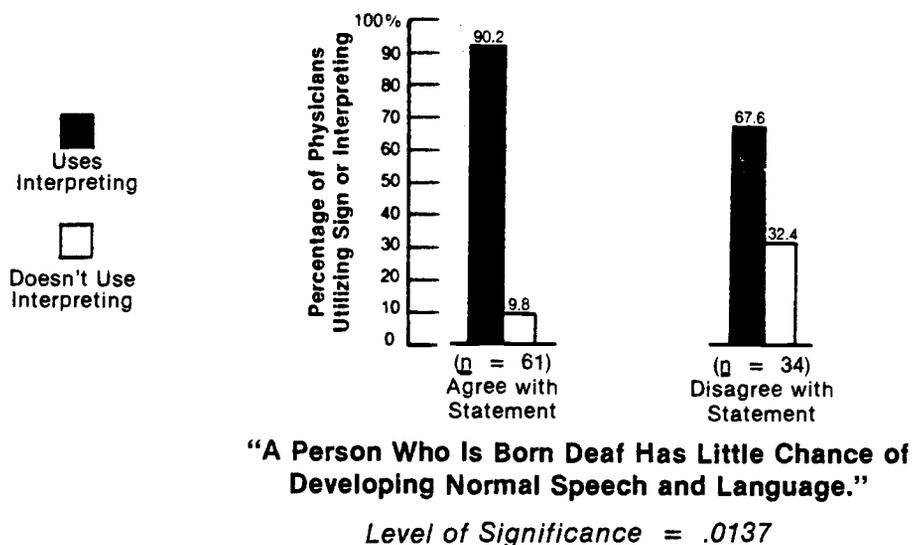


Figure 13

Sign or Interpreter Usage by Physicians Who Agree With the Statement: "A person who is born deaf has little chance of developing normal speech and language"

The chi-square statistic was used to test the strength of the relationship between physician agreement with the statement about speech and language development of persons born deaf and physician utilization of sign or interpreting with deaf patients. The chi-square corrected for continuity was 6.07904 with one degree of freedom. The significance level was .0137, therefore the null hypothesis was rejected.

Discussion: Literature on the speech and language acquisition difficulties of congenitally deaf persons suggested that some degree of speech and language deficiency will, in most cases, be present (Jordan, 1971; Davenport, 1977; DiPietro & Wyatt, 1978). Agreement with the statement "a person who is born deaf has little chance of developing normal speech and language," was viewed as reflecting more accurate information about deaf persons.

Therefore, the findings suggested that physicians who utilized some form of interpreting with deaf patients were more likely to have accurate knowledge about the limitations of a deaf person's chances of developing normal speech and language.

### Hypothesis 3

There will be no significant relationship between physicians' attitudes toward the deaf and the communication methods used with deaf patients.

This hypothesis was tested by examining the ATD part A and ATD part B scores of physicians, and the communication methods they used with deaf patients. For the purpose of this study, administration of the ATD part A, Attitude Toward Deafness Scale and ATD part B, Statements About Deaf Persons, was used to assess physician attitude toward the deaf. Communication method was assessed by the use of the section of the research instrument titled "Communication With Deaf Patients."

A one-way analysis of variance was computed to determine if choice of communication method could be attributed to ATD scale results. The computed F values and their levels of significance for each of the communication methods are summarized in Table 8. No significant differences were found to exist for any of the communication methods used by physicians. Hypothesis Three was retained.

Table 8

Anova Tabulations and Levels of Significance for Physicians  
Based on Physicians' Attitudes Towards the Deaf as  
Compared to Communication Methods Used With  
Deaf Patients

Communication Method	ATD Part A		ATD Part B	
	F	Level of Significance	F	Level of Significance
1. Speaking (Lipreading)	.074	.9287	.03	.9623
2. Talking Louder	1.658	.1970	1.905	.1556
3. Writing Notes	2.288	.1080	.700	.4994
4. Gestures, Body Language	.359	.6992	.138	.8716
5. Fingerspelling	1.544	.2199	.629	.5358
6. Some Basic Signs	.687	.5062	1.831	.1669
7. Signs Following English	1.770	.1770	2.301	.1068
8. Ameslan	.843	.3614	2.409	.1246
9. Child as Interpreter	.026	.9747	1.480	.2336
10. Spouse as Interpreter	1.198	.3070	.082	.9215
11. Parent as Interpreter	.178	.8370	1.638	.2007
12. Other Relative as Interpreter	1.185	.3111	1.104	.3365
13. Friend as Interpreter	2.537	.0854	.675	.5122
14. Professional Interpreter	.383	.6833	.061	.9406
15. Office Staff as Interpreter	.465	.6296	.238	.7892

Discussion: A cursory interpretation of this finding would suggest that physician attitude was not related to the communication methods they used with deaf patients. In fact, the total physician research population was relatively homogeneous in the methods used for communication with deaf patients. **Lipreading**, and **writing notes** were used by over 75% of the physicians, while **professional interpreters** were used by less than 25% of the physicians. Additionally, any form of **manual communication** was used by less than 20% of the doctors.

#### Hypothesis 4

There will be no significant relationship between the communication methods used with deaf patients and the effectiveness of the method as judged by the physician.

This hypothesis was tested by comparing physician judgement of effectiveness of each communication mode by physicians who used the method versus physicians who had not used the method with their deaf patients. This portion of the research questionnaire was completed only by physicians who had seen deaf patients in their medical practices during the last two years. Physicians' responses to the Communication With Deaf Patients portion of the research instrument are summarized in Table 7, page 84.

The chi-square statistic was used to test the relationship between physician judgement of effectiveness and the communication methods used with deaf patients. Physicians who reported using a communication method judged it to be significantly more effective than physicians who reported that they had not used the method, for all communication modes except **lipreading, parent as interpreter, other relative as interpreter and friend as interpreter**. The null hypothesis was rejected for eleven of the fifteen communication methods. These results are illustrated in Figure 14.

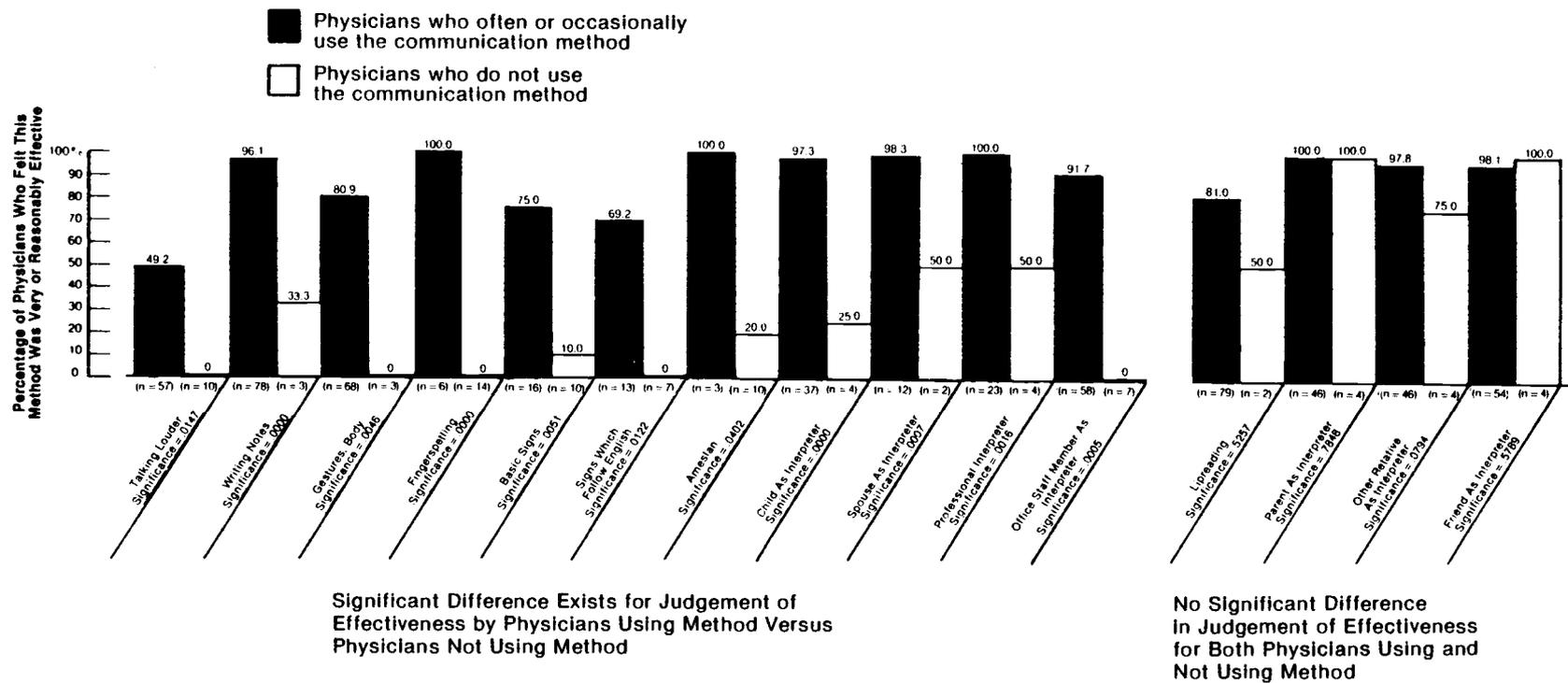


Figure 14

Physician Judgement of Effectiveness of Various Communication Methods Used With Deaf Patients

The raw chi-square, degrees of freedom and significance levels for each communication method comparison which met the level of confidence criteria set a .05, and for which the null hypothesis was rejected, are shown in Table 9.

Table 9  
 Communication Methods Which Met  
 the .05 Level of Significance

Communication Method	Raw Chi-Square	Degrees of Freedom	Level of Significance
Talking Louder	8.43905	2	.0147
Writing Notes	20.14005	2	.0000
Gestures, Body Language	10.76746	2	.0046
Fingerspelling	20.00000	2	.0000
Basic Signs	10.54444	2	.0051
Signs Which Generally Follow English	8.81119	2	.0122
Ameslan	6.42778	2	.0402
Child as Interpreter	21.57764	2	.0000
Spouse as Interpreter	14.51843	2	.0007
Professional Interpreter	12.82037	2	.0016
Office Staff Member as Interpreter	15.23958	2	.0005

The significance level criteria of .05 was not met for **lipreading, parent of patient as interpreter, other relative as interpreter, and friend as interpreter.**

Discussion: Physicians who reported that they had used a specific communication mode judged the mode to be an effective communication method with deaf patients for all methods except **talking louder**. Only 49.2% of the doctors who used **talking louder** felt that it was an effective communication method. All physicians who chose not to use **talking louder** felt that it was an ineffective method. The majority of physicians who chose not to use specific communication methods judged all methods they had not used to be ineffective, with the exception of **spouse as interpreter** and **professional interpreter**. Fifty percent of the physicians who had not used these two methods felt that they were effective modes of communication to use with deaf patients.

Three of the four methods, for which there was no significant difference in physician opinion of effectiveness, were judged to be effective communication methods by both groups of physicians. These three methods were: **parent as interpreter; other relative as interpreter; and friend as interpreter.**

**Lipreading** was judged to be an effective method by 81% of the physicians who had used it and by 50% of the physicians who had not used it.

The perception of effectiveness of a specific communication method appeared to be related to actual usage of the method by the physician. Physicians who had not used a method tended to judge the method as not very effective. The exceptions to this were: **talking louder**, which the majority of all physicians felt was not very effective; **interpreting done by a spouse, professional, parent, relative or friend**, which were felt to be effective by the majority of all physicians; and **lipreading**, which the majority of all physicians felt was an effective communication method.

#### Summary of the Statistical Findings

The collected data were analyzed for each of the four hypotheses.

Hypothesis One was rejected because there was a significant demographic effect on physicians' attitudes toward the deaf. More positive attitude scores on the ATD scale were obtained by physicians who had a higher frequency of appointments with deaf patients. Physicians who were viewed as having the most accurate information about deaf persons were found to have attended ten or more continuing education meetings per year or to have had previous sign language experience or classes. Significant differences were found for physician information about deaf persons and physician year of

graduation from medical school, practice specialty, and age; however, these findings did not appear to suggest predictable trends.

Hypothesis Two was rejected because there was a significant demographic effect on the methods of communication physicians used with their deaf patients. Physicians who had previous sign language experience or classes or who had more frequent appointments with deaf patients used some form of sign language or an interpreter more often in medical appointments with deaf patients, than did the physicians who had no sign experience or classes or had less than six appointments with deaf patients. Additionally, physicians who had previous sign language experience judged manual communication methods to be effective modes of communication with deaf patients significantly more often than physicians without previous sign experience.

Hypothesis Three was retained. There was no significant relationship between physicians' attitudes toward the deaf and the various communication methods used with deaf patients.

Hypothesis Four was rejected because there was a significant relationship between the communication methods used with deaf patients and the effectiveness of the method as judged by the physician. The majority of physicians who reported using a specific communication

method also judged that method to be an effective means of communication with deaf patients. Physicians who did not use a method tended to judge the method as ineffective. **Talking louder** was the only method judged as not very effective by the majority of all physicians. The majority of all physicians judged **lipreading** and **parent, other relative or friend as interpreter** as effective communication modes to use with their deaf patients.

## V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The central purpose of this study was to examine physicians' attitudes toward and communication practices with deaf patients. The major objectives, procedures, and findings are summarized in the following section.

Objective 1: To review existing literature and research dealing with physicians' attitudes toward deaf persons and the communication methods used with deaf patients.

Related literature pertaining to communication in the physician-patient interaction, health care for deaf patients, attitudes toward the deaf, and the training of physicians in the area of deafness were examined. The results of this activity revealed that:

1. Effective communication between the physician and patient is an essential element in the provision of appropriate medical care. Deaf patients have experienced extreme frustration in many of their health care interactions, based on the communication difficulties which they have had with health care providers.

2. In the majority of the cases, inappropriate or inadequate medical care to deaf patients was based on the communication barrier between deaf persons and health care providers. Often times the medical personnel was unaware of a need to provide communication through a mode other than speaking or writing.
3. No previous studies have been done to measure physicians' attitudes toward the deaf. The Attitudes Toward Deafness scale had been used to measure the attitudes towards deafness of professionals in several areas, and therefore appeared to be an appropriate tool for measuring physicians' attitude toward deafness.
4. Physician training in the area of deafness was found to be very limited. Physicians had minimal information about the communication problems which result from a profound hearing loss and the consequential problems which are inherent in the medical care of deaf patients.

Objective Two: To identify, develop and field test methodology designed to assess attitudes physicians have toward the deaf and communication techniques physicians use with deaf patients.

The Attitude Toward Deafness Scale (ATD) was selected for administration. Additionally, instruments were developed to measure demographics, information about communication skills of deaf adults, and communication modes with deaf patients. A field test and critique of the instruments selected and developed was performed. Appropriate revisions to the instruments were made and a pilot study was conducted with physicians.

Objective Three: To administer the research instruments to physicians currently practicing medicine in Oregon.

The research instruments were administered to 100 physicians currently practicing medicine in Linn and Marion Counties of Oregon. In Linn County, physicians responded to the instrument at medical staff meetings and in Marion County, physicians responded to the instrument by mail.

Objective Four: To examine physicians' attitudes toward the deaf and communication practices used with deaf patients.

Four hypotheses were generated to enable the investigator to examine physicians' attitudes and communication practices with deaf patients:

HO<sub>1</sub> There will be no significant demographic effect on physicians' attitudes toward the deaf.

Findings: There was a significant demographic effect on physicians' attitudes toward the deaf, as measured by the ATD scale and the Statements About Deaf Persons instrument. Since it was hypothesized that there would be no significant demographic effect, the hypothesis was rejected.

Discussion: This research study represented the first time that physicians' attitudes toward the deaf had been examined. Physicians included in this study were found to have a generally positive attitude toward deaf persons, as measured by the ATD scale. The mean score for physicians was 49.45 with a standard deviation of 7.56. Previous research found: hearing rehabilitation counselors of the deaf had a mean ATD score of 51.28 with a standard deviation of 7.32 (Galloway, 1973); hearing impaired rehabilitation counselors of the deaf had a mean ATD score of 51.18 with a standard deviation of 9.35 (Galloway, 1973); and

deaf professionals had a mean ATD score of 53.50 (no standard deviation given) (Blake, 1972). These findings were interpreted as: the lower the score, the more positive the attitude toward deafness. Physicians in this study compared well to other professionals who had been sampled.

Physicians who had the highest frequency of appointments with deaf patients also had the lowest ATD scores, which reflected a more positive attitude toward the deaf. It appeared that, for physicians, either more frequent contact with deaf patients resulted in a healthier perspective of deafness, or that members of the deaf community sought out doctors whom they perceived to have more positive attitudes towards deafness.

An important finding for adult educators was that physicians who attended more than ten continuing education meetings per year were found to have more accurate information about the communication problems of the deaf than physicians who attended less than ten meetings per year. Physicians' information base about deafness has been strongly criticized; however, this information gap appeared to be more prevalent among physicians who generally sought out less continuing education experience in all fields.

H<sub>0</sub><sub>2</sub> There will be no significant demographic effect on the methods of communication physicians use with deaf patients.

Findings: There was a significant demographic effect on the methods of communication physicians used with their deaf patients. Since it was hypothesized that there would be no significant demographic effect, the hypothesis was rejected.

Discussion: Sign language or interpreting was used most often by physicians who had either previous sign language experience or frequent appointments with deaf patients. Those physicians with previous sign experience also judged the various manual communication modes to be effective methods of communication with deaf patients. Physicians with less frequent appointments with the deaf used note writing to communicate with their deaf patients.

Deaf adults and critics of medical services for the deaf have concluded that the use of some form of sign language or an interpreter provides the most effective mode of communication for deaf patients. Physicians who use writing may be uninformed of this information or may be unprepared for deaf patients because they have had infrequent contact with deaf patients. Inaccurate information certainly may be part

of the problem. One group of physicians who used note writing, was aware of community interpreting services, but felt that they did not need to use interpreters to provide medical services.

The notion that interpreting is not needed to provide medical service for deaf patients has been contradicted by the deaf community and researchers. Doctors who held this opinion were viewed as having a lack of accurate information about the complexities of communication with deaf persons. The interpretation of this finding was supported by an additional result of the study which found a more accurate information base about deaf persons among physicians who used interpreters in their medical practices.

HO<sub>3</sub> There will be no significant relationship between the physicians' attitude toward the deaf and the communication methods used with deaf patients.

Findings: There was no statistically significant relationship between physicians' attitudes toward the deaf and the communication methods they used with their deaf patients. Therefore, the hypothesis that attitude would have no effect on the communication method used was retained.

Discussion: The physicians in the study obtained scores on the ATD scale which suggested a generally

positive attitude toward deaf persons. The standard deviation of 7.56 was consistent with the physicians in this study having relatively homogenous opinions about deafness. The lack of variation in scores was reflected in no statistically significant findings regarding the effect of attitude on physician selection of communication modes used with deaf patients.

HO<sub>4</sub> There will be no significant relationship between the communication methods used with deaf patients and the effectiveness of the method as judged by the physician.

Findings: There was a significant relationship between communication methods used by physicians and their judgement of effectiveness of the methods. Since it was hypothesized that there would be no significant relationship, the hypothesis was rejected.

Discussion: Physicians in the study recognized that **talking louder** was not an effective communication method to use with deaf patients, yet 57% of those sampled did use it. **Writing notes** was used by 78% of the physicians and felt to be an effective communication method by 96% of these physicians. **Lipreading** was used by 79% of the physicians and was felt to be an effective communication method by 81% of the physicians using it and 50% of the physicians who did not use it. These

three methods are heavily criticized as inadequate by members of the deaf community. Physicians persisted in using all three methods and continued to believe that two of them were effective methods. This finding suggested a lack of understanding among physicians regarding appropriate communication methods to use with deaf patients. Additionally, physicians in this study were actually using methods which deaf adults and critics of medical care to the deaf have labeled as inadequate.

Physicians who had actually used some form of manual communication or interpreting felt that these methods worked effectively for them in communicating with their deaf patients. In contrast, physicians who did not use forms of manual communication felt them to be ineffective modes for use with deaf patients. This finding may indicate an accurate awareness on the part of the physicians of their own lack of expertise with sign language. The findings of this study did not indicate if the physicians who used forms of sign language judged these methods to be effective because of their own high skill levels in sign, or because of a lack of information on the complexities of sign language. In this study, a relatively small number of physicians actually reported using sign or fingerspelling.

The majority of physicians in this study judged all interpreting modes except **child as interpreter** to be effective communication methods, yet interpreting was used by far fewer physicians than was **lipreading** or **writing notes**. Only 23% of the physicians reported that they had used a **professional interpreter**. A gap exists between the awareness of interpreter usage effectiveness and the actual usage of interpreters in the medical setting.

### Conclusions

Research and literature reporting on medical services for the deaf had indicated that deaf patients have been extremely frustrated with the lack of accurate communication with medical personnel. At times, deaf patients have received inappropriate medical care based on the communication gap.

Prior to this research study, information was not available regarding physicians' perspective of this identified problem. Physicians readily participated in the study, indicating a willingness to examine the problems of providing medical care to deaf patients. The feasibility of doing research within the medical community may depend on one or two physician contacts who are willing to request the assistance of other physicians. The current study has provided information

on physicians' attitudes, information base, and communication methods used with deaf patients. Adult Education researchers have indicated that the more information professionals have, the more information they want to obtain. This may have been true for physicians in this study, as physicians who attended continuing education meetings more often had a more accurate information about the problems of communication for the deaf. Although this finding could only be tied to a statistical result, it may indicate that physicians who sought knowledge through continuing education also had a broader information base in multiple areas of interest.

Physicians were found to have generally positive attitudes toward the deaf. A higher incidence of preparedness to communicate appropriately with deaf patients was found among physicians who had seen more deaf patients and who had attended a higher number of continuing education meetings.

Among some physicians a substantial information gap was present regarding appropriate communication modes to use with deaf patients. Physicians who had only a few appointments with deaf patients used writing as a communication mode. Physicians who used writing as a major communication mode also felt that interpreting was not needed to provide medical care in

their practices. Interpreting was viewed as one of the major keys to appropriate medical care by both researchers and the deaf community.

The communication modes used with deaf patients most often by physicians were **speaking (lipreading), writing notes, and gestures or body language. Talking louder, as well as family members or friends as interpreters** were used by approximately 50% of the physicians. **Professional interpreters** were used much less frequently, by only 23% of the physicians.

Objective 5: To utilize findings to prepare recommendations for physician preservice and inservice training pertaining to deaf patients.

#### Recommendations for Action

Based on the literature review and the results of this study, the following recommendations for action are proposed:

1. Further information is needed by physicians regarding communication with deaf patients.

Physicians in this study had a generally positive attitude toward the deaf and showed a willingness to participate in examining the problems of delivering medical care to deaf patients. Physicians are in need of accurate information about the communication problems of the deaf patient population. The

educational community has a responsibility to disperse more comprehensive and accurate information to physicians through inservice presentations and changes in medical school curriculum.

2. Medical school training should include information on the communication problems which will be encountered with the deaf.

The major emphasis should be to build an awareness of the importance of adequate communication, situations which limit communication, and when it is appropriate to seek assistance in communication with deaf patients.

Otolaryngology residents would benefit from specific information and demonstrations of the effects of various levels of hearing loss on auditory and oral communication skills. Actual contact with profoundly deaf persons would have an impact on the residents' information base. Otolaryngologists are respected and viewed as the medical experts on hearing loss within the medical community. They therefore need accurate information on the communication effects of deafness, in order to provide this information to other professionals and physicians who will be working with deaf patients.

Emergency room physicians represent another specific group which has regular contact with deaf patients. They should also be targeted for increased

education on the effects of hearing loss and deafness on communication.

3. Hospitals, medical offices, medical laboratories and other auxillary medical service providers should establish ongoing mechanisms for educating staff members in respect to deafness and how deaf persons communicate. Information could be in the form of inservices as well as a guide book which includes the following topics.

Information is needed about the various communication methods used with deaf patients. The strengths and restrictions of each method need to be addressed.

Deaf patients should be used as a resource. Deaf patients know which communication methods they prefer. If an interpreter is needed, the deaf patient may be able to suggest specific community resources or interpreters.

Facilities should determine if interpreters are available in the local community. Policies and procedures should be established regarding: knowing when to request an interpreter; how to contact a qualified interpreter; how to appropriately use an interpreter; and how to pay for an interpreter's services. A current list of interpreters available in the local community needs to be readily available for staff members. The state organization for the deaf may be helpful in providing this information.

Sensitivity to the visual environment needs to be taken into account. Deaf persons receive information primarily through vision; therefore, factors such as lighting, wearing glasses, surgical masks, visual reassurances, not blocking face with hands, speaking expressively and using gestures, and speaking directly to the patient should be taken into consideration.

Writing back and forth with patients can be a time consuming and not always effective communication mode. Staff members should be given information for using simple, straight forward sentence structure and if possible, some information about how Ameslan differs and compares to English. Printed intake forms should be simple and assistance in completing them offered if needed.

Visual displays and demonstrations should be used whenever possible. Staff members should use charts, pictures and three-dimensional models to present instructions and procedures to deaf patients. Visual examination of instruments could be used if apprehension is noted.

Specially developed materials are available for use with deaf patients. Facilities should request current materials from sources which have prepared health materials for the deaf.

Communication accessibility for deaf patients needs to be provided. Medical facilities need to have a T.T.Y. (teletypewriter) available for phone contact with the deaf community. Staff members may need additional information on the use of T.T.Y. units.

4. Deaf consumers should be encouraged to learn more about their own health care and special needs in the medical setting.

Interpreters should be provided at consumer education courses which are aimed at health care issues. Agencies serving the deaf should provide information to deaf persons concerning how to request, arrange and best utilize interpreters in the medical setting.

State and national organizations for the deaf could assist hospitals by providing lists of resources and interpreters available for the local areas.

5. Deaf students need to receive current information on major health problems they may encounter and how best to obtain medical assistance.

Vocabulary for usage with physicians and health care professionals needs to be included in the curriculum for deaf children. This vocabulary should also be transmitted to interpreters in order to provide clear communication in the medical setting.

Deaf students should be encouraged to be familiar with their own medical case histories. They should be

prepared to request information from schools and physicians and even keep their own file of information if ongoing medical problems are present.

6. Qualifications for medical interpreters should be recommended by organizations certifying interpreters. Interpreters for legal situations are required to have specific skills and vocabulary. Persons wishing to interpret in the medical setting also need to be aware of vocabulary and interactions which are specific to hospital and ancillary medical settings.

#### Recommendations for Further Study

Further research should be conducted to provide the following information:

1. Replication of the study with other groups of health care providers is appropriate.

This research methodology was effective in gaining new information from the medical community about provision of medical services to deaf patients. Replication of the study, utilizing the Statements About Deaf Persons scale and the Communication with Deaf Patients instrument, could provide useful information for inservice training. Allied health care providers such as emergency room staff, nurses, medical office staff and hospital staff members could provide direct information about their knowledge level of communication problems and

the communication methods currently used in their medical settings.

Brief inservice or informational brochures should be provided to the participants regarding appropriate communication methods and considerations with deaf patients.

2. Study replication in urban areas with a greater deaf population may affect the findings regarding attitude and communication methods used.

3. A study of the current methods for reimbursing interpreters for the deaf would appear to have value.

Physicians and health care providers are asked to use interpreters. Therefore, they must be provided with information about the accessibility of interpreters and methods for compensating either the physician, auxillary health care provider, interpreter, or patient for the added expense. Methods for reimbursement may vary according to community, type of referral, agencies involved, income level of patient, and type of medical service provided.

4. An examination of alternative ways to provide interpreters for hospitals may be helpful for deaf patients.

The feasibility of using an existing staff member as an interpreter should be examined. A permanent staff member who has some sign skills or an interest in sign

could be trained in medical sign interpreting. The hospital could help support the training costs in order to have a resident interpreter available in the future.

5. An examination is needed of deaf students' current information base and vocabulary pertaining to medical problems. If current curriculums are found to be lacking in this area, then materials and programs need to be designed and implemented.

6. Investigation of the most appropriate educational sources for inservices to hospitals, physicians, and allied health care professionals is needed.

Recommendations for inservice training have been stressed, yet who shall best provide this information to the medical community remains an unanswered question. Change cannot take place unless this much needed information about deafness is effectively dispensed.

## BIBLIOGRAPHY

- Abbott, N., & Gear, S. (1979) A Special Report . . .OCR Issues Guidelines on 504 Regulations for Health Services (pp. 3-6). Washington, DC: The National Center for Law and the Deaf.
- Armitage, K.J., Schneiderman, L.J., and Bass, R.A. (1979). Response of physicians to medical complaints in men and women. JAMA, 241, 2186-2187.
- Association of American Medical Colleges (1982-1983). 1982-83 AAMC Curriculum Directory. Washington, DC: Author.
- Baty, S., & Golstein, R. (1976, June). What if your patient is also deaf? R.N. Magazine, pp. 1-12.
- Blake, G.D. (1972). Effects of integrated training experiences on attitudes of hearing adults toward deaf adults and deafness. (Doctoral dissertation, University of Arkansas, 1972). Dissertation Abstracts International, 32, 809A.
- Borg, W.R., & Gall, M.D. (1979). Educational research, (3rd ed.). New York: Longman.
- Brown, D. (1980). Getting needed treatment: It doesn't come to you, you have to go and get it. Disabled USA, 4 (2), 3-7.
- Burstein, M., & Federlin, T.M. (1979). Sign language interpreting in a metropolitan hospital. The Deaf American, 32, 5-7.
- Butt, H.R. (1977) A method for better physician-patient communication. Annals of Internal Medicine, 86, 478-80.
- Chaney, P. (1975). Ordeal. Nursing, 5 (6), 27-40.
- Chapman, J. (1975). Special health needs of the hearing impaired. Volta Review, 77 (1), 35-44.
- Clark, E. (1981, July). Over coffee, he understood "most of the it." The Trumpet, p. 7.
- Cowen, E.L., Bobrove, P.H., Rockway, A.M., & Stevenson, J. (1967). Development and evaluation of an attitudes to deafness scale. Journal of Personality and Social Psychology, 2, (2), 183-191.

- Cowen, E.L., Underberg, R.P., & Verrillo, R.T. (1958). The development and testing of an attitude to blindness scale. Journal of Social Psychology, 48, 297-304.
- Davenport, S.L. (1977). Improving communication with the deaf patient. Journal of Family Practice, 4, 1065-1068.
- Davis, M.S. (1966). Variations in patients' compliance with doctors' orders: Analysis of congruence between survey responses and results of empirical investigations. Journal of Medical Education, 41, 1037-1048.
- Davis, M.S. (1968). Variations in patients' compliance with doctors' advice: An empirical analysis of patterns of communication. American Journal of Public Health, 58, 274-288.
- DiMatteo, M.R., & Hays, R. (1980). The significance of patients' perceptions of physician conduct: A study of patient satisfaction in a family practice center. Journal of Community Health, 6, (1), 18-34.
- DiNardo, P.A. 1975. Social class and diagnostic suggestion as variables in clinical judgment. Journal of Consulting and Clinical Psychology, 43, 363-368.
- DiPietro, L.J., & Wyatt, H.J. (1978). You and Your Deaf Patients (Pamphlet published for physicians). Washington, DC: Public Service Programs, Gallaudet College.
- DiPietro, L.J., & Knight, C.H. (1982, January/February). When your patient is deaf. The Professional Medical Assistant, pp. 16-23.
- DiPietro, L.J., Knight, C.H., & Sams, J.S. (1981). Health care delivery for deaf patients. The provider's role. American Annals of the Deaf, 126, 106-112.
- Downie, N.M., & Heath, R.W. (1974). Basic statistical methods. (4th ed.). New York: Harper & Row.
- Drucker, E. (1974). Hidden values and health care. Medical Care, 12, 266-273.
- DuBow, S. (1979). Federal actions on interpreters and telecommunications. American Annals of the Deaf, 124, 93-96.

- Eisenberg, J.M. (1979). Sociologic influence on decision-making by clinicians. Annals of Internal Medicine, 90, 957-964.
- Emerton, R.G., & Rothman, G. (1978). Attitudes towards deafness: Hearing students at a hearing and deaf college. American Annals of the Deaf, 123, 588-593.
- Falvo, D.R. (1978/1979). The relationship between patients' perception of various aspects of their interaction with family practice physicians and patient compliance. (Doctoral Dissertation, Southern Illinois University at Carbondale, 1978). Dissertation Abstracts International, 39, 6028A.
- Fellendorf, G.W. (1975). Health care and the hearing impaired. Volta Review, 77 (1), 5-73.
- Fisher, C.S. (1979/1980). The negotiation of treatment decisions in the doctor/patient communication and their impact on the identity of women patients. (Doctoral dissertation, University of California, San Diego, 1979). Dissertation Abstracts International, 40, 4763-A.
- Francis, V., Korsch, B.M., & Morris, M.J. (1969). Gaps in doctor-patient communication. New England Journal of Medicine, 280, 535-540.
- Gallaudet College Public Service Programs. (1976). What if your patient is also deaf? Washington, DC: Author.
- Galloway, V.H. (1973). Attitudes of rehabilitation counselors with the deaf toward deafness and deaf people (Doctoral Dissertation, University of Arizona, 1973). Dissertation Abstracts International, 33, 3286A.
- Golden, P., & Ulrich, M. (1978). Deaf patients' access to care depends on staff communications. Hospitals, JAMA, 52, 86-88.
- Gorski, R. (1980). 504 watch on hospitals. Disabled USA, 2, 13-18.
- Hanna, S.G. (1976). The deaf person as a patient the hospital. The Deaf American, 29 (1), 3-4.
- Henderson, L.J. (1935). Physician and patient as a social system. New England Journal of Medicine, 212, 819-823.

- Herth, K. (1974). Beyond the curtain of science. American Journal of Nursing, 74 (6), 1060-1061.
- Houle, Cyril O. (1980) Continuing learning in the professions. San Francisco: Jossey-Bass.
- Howell, Mary C. (1974). What medical schools teach about women. The New England Journal of Medicine, 291 (6), 304-307.
- Hulka, B.S., Cupper, L.L., Daly, M.B., Cassel, J.C. & Schoen, F. (1975). Correlations of satisfaction and dissatisfaction with medical care: A community perspective. Medical Care, 13, 648-668.
- Johnson, S.R., Guenther, S.M. Laube, D.W. & Keettel, W.C. (1981). Factors influencing lesbian gynecologic care: A preliminary study. American Journal of Obstetrics and Gynecology, 140 (1), 20-8.
- Jordan, J.M. (1971). "Doc, I Can't Hear So Good"--a deaf consumer views the medical profession. Medical Aspects of Deafness: Proceedings of Forum IV of the Council of Organizations Serving the Deaf pp. 14-18.
- Korsch, B.M., Gozzi, E.K., & Frances, B. (1978). Gaps in doctor-patient communication. Pediatrics, 42, 855-871.
- Landers, A. (1982, January 27). "Deaf Patient Deserves Care." Statesman-Journal, p. 2C.
- Lass, L.G., Franklin, R.R., Bertrand, W.E. & Baker, J. (1978). Health knowledge, attitudes, and practices of the deaf population in greater New Orleans--A pilot study. American Annals of the Deaf, 123, 960-967.
- Lattin, D. (1980). "Doctors and disabled people: Does father always know best?" Disabled USA, 4 (2), 1.
- Leff, J.P. (1971). Notions of the emotions, Mental Health and Society, 4, 308-18.
- Lennare, K. J., & Lennare, R.J. (1973.) Alleged psychogenic disorders in women--a possible manifestation of sexual prejudice. The New England Journal of Medicine, 288, 288-292.
- Marston, M.V. (1970). Compliance with medical regimes: A review of the literature. Nursing Research, 19, 312-323.

- McQuay, S.L. (1978). Attitudes of community college faculty toward the deaf: A Guttman Facet theory analysis (Doctoral dissertation, University of Connecticut, 1978). Dissertation Abstracts International, 38, 6650A.
- Meares, A. (1960, March 26). Communication with the patient, The Lancet, pp. 663-667.
- Miller L.V. (1976/1977). Attitudes toward deafness, motivation and expectations of students enrolled in manual communication classes (Doctoral dissertation, Brigham Young University, 1976). Dissertation Abstracts International, 37, 813A.
- Miller, Michael H. (1973). Who receives optimal medical care? Journal of Health and Social Behavior, 14, 176-182.
- Mistler, S. (1978). Beyond the sound barrier. Washington, DC: George Washington University Regional Rehabilitation Research Institute on Attitudinal, Legal and Leisure Barriers.
- Moore, D.F. (1970). Psycholinguistics and deafness. American Annals of the Deaf, 115, 37-48.
- Mueller, K., & Gantt, D. (1978). Communicating with the deaf patient. Journal of Dentistry for the Handicapped, 3 (2), 22-5.
- National Conference on Dental Care for Handicapped Americans. (1979). Journal of Dental Education, 43, (10, pt. 2), 1-41.
- Oregon Association of the Deaf (1982). 1982 Oregon Association of the Deaf Directory of Services. Portland: Author.
- Oregon Health Sciences University. (1983, Fall). Audiology course schedule and bibliography for ENT residents. (Available from Department of Otolaryngology, 3515 S.W. Veterans Hospital Road, Portland, Oregon 97201.
- Perron, D. (1974). Deprived of sound. American Journal of Nursing, 74, 1057-1059.
- Pratt, L., Seligman, A. & Reader G. (1957). Physicians' views on the level of medical information among patients. American Journal of Public Health, 47, 1277-1283.

- Quigley, S.T. (Ed.) (1965). Interpreting for deaf people, a report of a workshop on interpreting (pp. 61-75). Washington, DC: US Department of Health, Education, and Welfare Vocational Rehabilitation Administration.
- Rosswurm, M.A. (1980) Changing nursing students' attitudes toward persons with physical disabilities. Association of Rehabilitation Nurses, ARN Journal, 5 (81), 12-14.
- Routh, D.K., & King, K.M. (1972). Social class bias in clinical judgement. Journal of Consulting and Clinical Psychology, 38, 202-207.
- Schein, J.D. & Delk, M.T. (1974). The deaf population of the United States. Silver Spring, Maryland: National Association of the Deaf.
- Schein, J.D. & Delk, M.T. (1980). Survey of health care for deaf people. The Deaf American, 32 (5), 5-6; 27.
- Schroedel, J.G. & Schiff, W. (1972). Attitudes towards deafness among several deaf and hearing populations. Rehabilitation Psychology, 19 (2), 59-70.
- Shipley-Conner, E. (1980). DCARA, Proposal for Provisions of Access Assistance for the Deaf p. 26. Oakland: Deaf Counseling Advocacy in Referral Agency.
- Shuy, R.W. (1976). The medical interview: Problems in communication. Primary Care; Clinics in Office Practice, 3, 365-386.
- Stein, S.P. (1977). Problems of communication. An Orientation to Deafness for Social Workers: Papers from the Workshop. Washington, DC: Gallaudet College.
- Wood, B.L. (1981). Communication considerations, Unpublished manuscript, Western Oregon State College, Monmouth, Oregon.
- Yuker, H.E., Block, J.R. & Young, A. H. (1970). The Measurement of Attitudes Toward Disabled Persons. Albertson, New York: Human Resources.
- Zola, I.K. (1963). Problems of communication, diagnosis, and patient care: The interplay of patient, physician and clinic organization. Journal of Medical Education, 38, 829-838.

## APPENDICES

## APPENDIX A

## Research Instruments:

Demographic Information  
Opinions about Deafness and Deaf Persons  
Statements about Deaf Persons  
Communication with Deaf Persons

The following questions are designed to help provide the researcher with information about medical services for deaf patients. Thank you for participating in this research project.

#### DEMOGRAPHIC INFORMATION

Please provide the following information about yourself by checking (✓) the appropriate space. (Where appropriate, you can mark more than one response.)

##### 1. AGE:

25-29 years     30-35 years     36-40 years     41-45 years     46-50 years     51-55 years     56-60 years     61-65 years     over 65 years

##### 2. YEAR OF GRADUATION FROM MEDICAL SCHOOL:

1982-1975     1974-1970     1969-1965     1964-1960     1959-1955     1954-1950     1949-1945     1944-1940     before 1940

##### 3. PRACTICE SPECIALTY:

Anesthesiology     Emergency Room     Family Practice     General Practice     Internal Medicine     Neurology     Obstetrics/Gynecology     Ophthalmology     Orthopedics     Otolaryngology     Pediatrics     Psychiatry     Surgery     Other (Please list) \_\_\_\_\_

##### 4. APPROXIMATE NUMBER OF MEDICAL CONTINUING EDUCATION MEETINGS YOU ATTEND PER YEAR:

none     1-3     4-5     6-10     over 10

##### 5. DEAFNESS IN FAMILY?    Yes    No (If Yes, please check relationship to you.)

child     parent     sibling     spouse     other relative     other (Please list)

##### 6. APPROXIMATE NUMBER OF TOTAL VISITS OR APPOINTMENTS BY DEAF PATIENTS TO YOU IN LAST TWO YEARS:

none     1-2     3-5     6-10     11-15     16-20     21-25     over 25

##### 7. SIGN LANGUAGE EXPERIENCE OR CLASSES:

none     one sign language class     more than one class     know sign language     signing with friend or family member     contact with deaf persons, however no formal sign language training

##### 8. DO YOU KNOW OF A PERSON, FACILITY, OR AGENCY IN YOUR COMMUNITY THAT PROVIDES SERVICES IN SIGN LANGUAGE INTERPRETING FOR DEAF PERSONS?    Yes    No

##### 9. IF YOU KNOW OF A RESOURCE FOR INTERPRETING, DO YOU UTILIZE THESE SERVICES?

Yes     No, in my setting, sign language interpreters are not needed to provide medical care for deaf patients.     No, the services are available in my facility.     No deaf patients in my practice.     No, deaf patients seen had interpreter with them.

PART A: OPINIONS ABOUT DEAFNESS AND DEAF PERSONS (ATD Scale, Cowen, et al., 1967)

Please circle the number to the right of each statement that best expresses how you feel about it.

1. Strongly Disagree                      3. Agree  
2. Disagree                                      4. Strongly Agree

Please be sure to mark a response for each statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Deaf persons generally have a less mature personality than hearing persons.	1	2	3	4
2. In general, deaf people are more neurotic than those who hear.	1	2	3	4
3. It is impossible to really get "close" to a deaf person.	1	2	3	4
4. Deaf people somehow seem sadder and more wrapped up in themselves than hearing people.	1	2	3	4
5. Deaf people do not seem to be bothered by ordinary life events any more than hearing people.	1	2	3	4
6. Because of his need to be pitied, it is particularly important that the deaf person has someone with whom to communicate.	1	2	3	4
7. Deaf people also seem to have more than the usual number of other physical complaints.	1	2	3	4
8. Deaf people show personality characteristics which frequently make them seem odd.	1	2	3	4
9. A person who is deaf is as apt to be born a leader as anyone else.	1	2	3	4
10. Deaf people seem to be overly polite.	1	2	3	4
11. Most deaf people feel that they are worthless.	1	2	3	4
12. Most deaf people are dissatisfied with themselves.	1	2	3	4
13. Deaf people have as many interests as hearing people have.	1	2	3	4
14. The deaf adult is not quite as mature or "grown-up" as the hearing adult.	1	2	3	4
15. It is difficult to understand deaf people because they keep to themselves so much.	1	2	3	4
16. It must be bitterly degrading for a deaf person to depend so much on others.	1	2	3	4
17. On the whole, deaf children seem to be less intelligent than hearing children.	1	2	3	4

<u>OPINIONS ABOUT DEAFNESS AND DEAF PERSONS (Continued)</u>	Strongly Disagree	Disagree	Agree	Strongly Agree
18. I feel that deafness is as hard to bear as complete paralysis.	1	2	3	4
19. A deaf person cannot afford to talk back to people.	1	2	3	4
20. You should not expect too much from a deaf person.	1	2	3	4
21. A deaf person is constantly worried about what might happen to him.	1	2	3	4
22. A deaf person is not afraid to express his feelings.	1	2	3	4
23. Deaf people are more easily upset than people who can hear.	1	2	3	4
24. Deaf people are prone to have many more fears about the world than hearing people.	1	2	3	4
25. Deaf people are usually on their guard with hearing people.	1	2	3	4
<u>PART B: STATEMENTS ABOUT DEAF PERSONS</u>				
Please circle your response to the following statements.				
1. A person who is born deaf has very little chance of developing normal speech and language.	1	2	3	4
2. Most deaf persons can communicate quite well with medical professionals by writing notes back and forth.	1	2	3	4
3. Most deaf persons can communicate fairly well by lipreading.	1	2	3	4
4. Most deaf persons can understand the basic medical terminology physicians use with patients.	1	2	3	4
5. Deaf patients admitted to hospitals are generally more apprehensive than hearing patients.	1	2	3	4
6. Most deaf persons who have graduated from high school have at least a 6th grade reading level.	1	2	3	4
7. Exaggeration of lip movements can help the deaf person lipread.	1	2	3	4
8. Sign language used by most deaf adults follows spoken English fairly well.	1	2	3	4
9. When using an interpreter, the physician should look and talk to the deaf patient and not the interpreter.	1	2	3	4

### COMMUNICATION WITH DEAF PATIENTS

If you have taken care of any deaf patients in the last 2 years, please complete this part of the questionnaire.

In SECTION A please check any communication methods you have used.

In SECTION B for the communication methods you have used, please check how effective you felt these methods to be.

SECTION A			SECTION B					
Please check any of the following communication methods which you have used with deaf patients.			Please check the effectiveness of this method for you.					
Often Use	Occasionally Use	Never Use	COMMUNICATION METHODS			Very Effective	Reasonably Effective	Not Very Effective
			1. SPEAKING TO PATIENT (LIPREADING)					
			2. TALKING LOUDER TO PATIENT					
			3. WRITING NOTES BACK AND FORTH TO PATIENT					
			4. USING GESTURES, BODY LANGUAGE					
			5. FINGERSPELLING					
			6. SOME BASIC SIGNS					
			7. SIGNS WHICH GENERALLY FOLLOW ENGLISH					
			8. AMESLAN, AMERICAN SIGN LANGUAGE					
			9. CHILD IN FAMILY AS INTERPRETER					
			10. SPOUSE OF PATIENT AS INTERPRETER					
			11. PARENT OF PATIENT AS INTERPRETER					
			12. OTHER RELATIVE AS INTERPRETER					
			13. FRIEND AS INTERPRETER					
			14. PROFESSIONAL INTERPRETER					
			15. OFFICE STAFF MEMBER AS INTERPRETER					

★ If you have used methods listed in SECTION A, please be sure that you have also rated these methods in SECTION B.

APPENDIX B  
Letter to Physicians

## Mid-Valley Speech and Hearing Center

950 S.W. 29th Avenue / Albany, Oregon 97321  
(503) 926-8092

Ellen E. Johnson, M.A., CCC-A  
Audiologist

Nancy M. Dunn M.S., CCC-SP  
Audiologist  
Speech Pathologist

Gregg L. Burks M.S., CCC-SP  
Speech Pathologist

February 2, 1983

██████████ ██████████, M.D.  
██████████ ██████████ ██████████  
Salem, OR 97301

Dear Dr. ██████████:

I am writing to request your help in the completion of my doctoral dissertation research at Oregon State University. My thesis concerns communication methods physicians use with deaf patients. For this study, a deaf patient is defined as a person for whom the hearing sense is non-functional for the purposes of everyday living.

Physicians in Linn County and at the Corvallis Clinic have already completed the survey. I am now interested in responses from Marion County physicians, such as yourself, who have specifically been identified as physicians with deaf patients.

The enclosed survey takes approximately 7 minutes to complete and anonymity of response is assured. I would appreciate your help in this research by completing the attached questionnaire and returning it to me in the enclosed pre-stamped envelope.

If you have any questions about the research, please feel free to call me at my office (926-8092).

Thank you very much,  
**Redacted for Privacy**

Ellen E. Johnson, MA, CCC-A  
Licensed Audiologist

Enclosures

## APPENDIX C

ATD Scale Items, Item-Test  
Correlations and Indications of  
The Directions of The Attitudes

FINAL ATTITUDES TO DEAFNESS SCALE ITEMS WITH  
DIRECTION OF KEYING AND TWO INDEPENDENT  
SETS OF ITEM-TEST CORRELATIONS

Items	$r_1^b$	$r_2^b$
The deaf generally have a less mature personality than the hearing. (N) <sup>a</sup>	.64	.46
In general, deaf people are more neurotic than those who hear. (N)	.74	.36
It is impossible to really get "close" to a deaf person. (N)	.57	.59
Deaf people somehow seem sadder and more wrapped up in themselves than hearing people. (N)	.59	.80
The deaf do not seem to be bothered by ordinary life events any more than hearing people. (P)	.51	.33
Because of his need to be pitied, it is particularly important that the deaf person have someone very tolerant to whom he can talk. (N)	.49	.31
Deaf people also seem to have more than the usual number of other physical complaints. (N)	.46	.59
Deaf people show personality characteristics which frequently make them seem odd. (N)	.64	.66
A person who is deaf is as apt to be born a leader as anyone else. (P)	.46	.17
Deaf people seem to be overly polite and to lack spontaneity. (N)	.48	.79
Most deaf people feel that they are worthless. (N)	.59	.59
Most deaf people are dissatisfied with themselves. (N)	.53	.45
The deaf have as many interests as the hearing have. (P)	.52	.44
The deaf adult is not quite as mature or "grown-up" as the hearing adult. (N)	.56	.55
It's difficult to understand the deaf because they keep so much to themselves. (N)	.73	.62
It must be bitterly degrading for a deaf person to depend so much on others. (N)	.62	.39

FINAL ATTITUDES TO DEAFNESS SCALE ITEMS WITH  
DIRECTION OF KEYING AND TWO INDEPENDENT  
SETS OF ITEM-TEST CORRELATIONS

Items	$r1^b$	$r1^b$
On the whole, deaf children seem to be less intelligent than hearing children. (N)	.49	.51
I feel that deafness is as hard to bear as complete paralysis. (N)	.57	.32
A deaf person can't afford to talk back to people. (N)	.56	.07
You should not expect too much from a deaf person. (N)	.48	.62
A deaf person is constantly worried about what might happen to him. (N)	.60	.60
A deaf person is not afraid to express his feelings. (P)	.51	.15
Deaf people are more easily upset than people who can hear. (N)	.46	.12
The deaf are prone to have many more fears about the world than the hearing. (N)	.72	.60
The deaf are usually on their guard with people. (N)	.83	.58

$N^a$  indicates that agreement with the item reflects a negative attitude; P indicates that agreement with the item reflects a positive attitude.

$r1^b$  is based on 100 male and female introductory psychology students from evening extension-school classes;  $r2$  is based on 160 male introductory psychology students from the regular day-session classes.

[Cowen, E.L., Bobrove, P.H., Rockway, A.M., & Stevenson, J. (1967)]