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The preparation and involvement of Oregon speech-language pathologists in dysphagia

Christine Marie Gaynor
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AN ABSTRACT OF THE THESIS OF Christine Marie Gaynor for
the Master of Science in Speech Communication presented
November 7, 1989.

Title: The Preparation and Involvement of Oregon Speech-
Language Pathologists in Dysphagia.

APPROVED BY THE MEMBERS OF THE THESIS COMMITTEE:

Mary E. Gordon, Chair

Robert L. Casteel

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Speech-language pathologists (SLPs) have become
involved in the evaluation and treatment of swallowing dys-
function, called "dysphagia." Increasing demand for serv-
icing this disorder has resulted in management by various
professionals. Due to their knowledge of the functioning of
the larynx, pharynx, and oral cavity, SLPs may be particu-
larly involved.

Dysphagia often involves aspiration risks. Consequently, adequate preparation for its management is necessary. A committee formed by the American Speech-Language-Hearing Association (ASHA) has recommended prerequisites for management of dysphagic patients.

The purpose of this study was to determine the amount, type, and content of training acquired by SLPs presently working in dysphagia management, as well as their level of involvement. A questionnaire was sent to 97 Oregon SLPs. Of these, 77 (80%) responded, and 52 met criteria. The resulting data indicated that SLPs involved with dysphagia work in a variety of settings, including hospitals, nursing homes, home health agencies, and private practice. Seventy-two percent of the subjects have been involved with dysphagia management for less than 10 years; 79% treated between 1 and 10 patients for dysphagia the month prior to filling out the questionnaire; and 81% have provided other staff in their settings with in-service on dysphagia.

Responses indicated that universities have provided the least amount of preparation for dysphagia. Seventeen subjects specified no university training for dysphagia. All but one noted they had received some training through workshops. The amount of formal university or workshop background for dysphagia management was considerably less than on-the-job training. Eighteen subjects received training at university level, in workshops, and on-the-job.

The data show there are content areas which do not meet ASHA recommendations for dysphagia preparation. Deficient areas include normal anatomy and physiology of speech structures in infants, and counseling methods for dysphagic patients. Other content areas (e.g., normal anatomy and physiology of speech structures in adults) which would be expected to have been acquired through universities by all SLPs, were not checked by all subjects.

Responses dealing with the role of SLPs in dysphagia management demonstrate that SLPs tend to have primary responsibility in dysphagia management. Eighty-seven percent have a primary role in evaluation, and 80% in treatment. Other professionals ranked by respondents as having a high degree of involvement include the attending physician, nursing staff, occupational therapist, and physiatrist.

Correlations were computed between the figures provided for the number of patients treated and evaluated in one month and the number of hours in university and workshop training. The Pearson product moment correlation coefficient (r) showed no linear correlation between these two variables. A descriptive analysis grouped the subjects by quartiles from least to most prepared in dysphagia management. Mean and median for evaluation and treatment amounts of these quartiles demonstrated a relationship between preparation and involvement. Medians for involvement figures increased from 2 patients in one month for least prepared SLPs to 9 and 10 for the most prepared.

It was apparent from the 80% response and the comments of SLP subjects that there is a high level of interest regarding dysphagia among Oregon SLPs. The respondents have obtained their training for dysphagia management from various combinations of university, workshop, and on-the-job settings. The study showed a relationship between preparation and involvement as well as a need for definitive standards to discuss and establish criteria prior to service provisions in dysphagia. Possibly, university programs and continuing education activities through workshops and on-the-job training should combine to provide for adequate preparation for dysphagia management.

THE PREPARATION AND INVOLVEMENT OF OREGON SPEECH-LANGUAGE
PATHOLOGISTS IN DYSPHAGIA

by

CHRISTINE MARIE GAYNOR

A thesis submitted in partial fulfillment of the
requirements for the degree of

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with an emphasis in
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Portland State University

1990

TO THE OFFICE OF GRADUATE STUDIES:

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CHAPTER I

INTRODUCTION AND PURPOSE

INTRODUCTION

Dysphagia, the label for swallowing difficulty, involves a dysfunction of the food transport system through the oral, pharyngeal, and esophageal tracts. Dysphagia is a pathological problem involving the swallowing mechanism, frequently compromising the airway specifically at the level of the larynx. Its life threatening aspects necessitate precautionary measures in both the evaluation and management of patients (Meerhoff, 1985; Simmons, 1986).

Often it is the case that a number of professionals are involved with a patient who manifests symptoms of dysphagia. There may be a neurologist, gastroenterologist, physical therapist, attending physician, and various other professionals involved in the management team. Speech-language pathologists (SLPs), due to their special knowledge regarding the function of the larynx, as well as the entire upper aerodigestive tract, have become increasingly involved in the evaluation and management of swallowing disorder.

Yet, simply being a SLP does not equip a person to provide dysphagia services; specific training in dysphagia is critical. If SLPs are to provide appropriate services

for this population, then appropriate preparation is imperative. Dysphagia management is generally dealt with in medical settings. Clinicians receive the bulk of their training in the university setting with exposure to medical settings provided in off-campus practica and internships. How does this preparation correlate with the degree of involvement that SLPs have in management of dysphagia? Do present education programs meet the need for this area of growing concern?

STATEMENT OF PURPOSE

The purpose of this study was to determine the extent and characteristics of preparation that SLPs working with dysphagic patients have received. The primary question was: What is the type, content, and amount of preparation for dysphagia service that SLPs have obtained? Ancillary to this was the following question: What is the correlation between the degree of involvement that SLPs have in the evaluation of dysphagia and the amount of preparation they have had for this task? Additional information with regard to dysphagia was collected to provide descriptive data.

CHAPTER II

REVIEW OF THE LITERATURE

In reference to the dysphagia literature, Groher (1984) stated, ". . . knowledge in this field is still new and empirical data are lacking" (p. xii). He further commented that a number of disciplines have been involved in the management of dysphagia, but there has not been adequate treatment of the subject in any of them. This situation is rapidly in a process of change. Literature on dysphagia can now be found in journals dealing with nutrition, radiology, general medicine, otolaryngology, gastroenterology, nursing, geriatrics, neurology, speech-language pathology, rehabilitation, and dentistry.

Dysphagia appears to be a growing concern. Studies of nursing home populations show that 30 to 40% of patients have eating or swallowing problems and 10 to 15% of patients in acute care hospitals also have this condition (Elliott, 1988). Unilateral strokes cause dysphagia in more cases than previously thought. According to a study by Gordon, Hower, and Wade (1987), 45% of 91 patients with acute stroke had dysphagia when they were admitted to the hospital; and, 43% of 86 patients with damage to only one hemisphere had dysphagia. Elliott's 1988 report showed that of hospitalized patients with neurological problems, 25 to 50% had dysphagia. These

figures indicate that dysphagia, or disordered swallowing, is a significant concern that requires thorough understanding by those professionals working within hospitals and nursing home settings.

SWALLOWING

According to Bosma (1986) and Weiss (1988), swallowing can be identified at the 12th week of gestation. The normal full-term infant has functioning ability, through brainstem control, that coordinates the suckle, swallow, and respiration. Feeding problems in a newborn are the first indication of neurological damage (Weiss, 1988).

At the other end of life's spectrum, problems with swallowing are involved with many diseases that affect the elderly. Resulting complications with nutrition and eating are common. One of the last activities of daily living lost as illnesses progress is eating. The loss of a competent swallowing function presents the consideration of imposed nourishment (e.g., feeding tube) which can lead to further ethical questions (Castell, 1986; Siebens et al., 1986).

The anatomical structures involved in the swallow are the same structures of most interest to the SLPs. Movements of the tongue, jaw, and cheek muscles are coordinated to shape food into a bolus that can be transferred from the mouth through the pharynx into the esophagus. In its passage through the pharynx and into the esophagus, the bolus must bypass the larynx (Logemann, 1983; Weiden & Harrigan, 1986).

Swallowing Stages

Most authors discuss the swallow in three stages: oral, pharyngeal, and esophageal (Buchholz, 1986; Groher, 1984; Rosenthal & Boggis, 1983; Steefel, 1981). In adults, normal swallowing is a process that begins with oral preparation. Tongue seal is needed for positioning the bolus, for mastication, and for creating oral pressure for propelling the bolus against the hard palate to the velum. Proper range, force, timing, and sensation of movement are needed to keep the bolus in the oral cavity until the pharyngeal stage is initiated. Mandibular muscles give stability to the tongue and provide movement for mastication (Logemann, 1988a; Robbins, 1985).

When the bolus reaches the back of the mouth, sensory information to the brainstem triggers the swallow reflex and the pharyngeal stage is initiated (Castell & Donner, 1987; Everts, 1983; Love & Webb, 1986). The swallow reflex causes velopharyngeal and laryngeal closure (Logemann, 1988a). The velum raises to close the nasopharynx and the larynx raises with the vocal folds and the epiglottis closing to protect the airway (Rosenthal & Boggis, 1983). Normally, this closure takes one second; and, in one second more the bolus is cleared through the pharynx (Castell & Donner, 1987).

When the larynx returns to its resting position the sphincter at the top of the esophagus opens and the esophageal stage begins. The bolus passes through the cricopharyngeal sphincter at the top of the esophagus and then peristaltic action moves it to the stomach (Rosenthal & Boggis, 1983).

Neurology of Swallowing

The oral stage of the swallow uses voluntary control from the cerebral cortex as well as reflexive control from the brainstem. Cranial nerves (C.N.) involved in this stage are V, VII, X, and XII. The pharyngeal stage is entirely under brainstem coordination with the functioning of cranial nerves IX, X, and XI. In the esophageal stage brainstem involvement is combined with intrinsic neural control, with innervation by C.N. X, the vagus nerve (Buchholz, 1986; Rosenthal & Boggis, 1983).

A normal swallow is precipitated by neuromuscular control that coordinates the mechanisms of the larynx and the pharynx with oral physiology (Logemann, 1988a). This coordination requires neurological integrity of the system. Emphasis on evaluation of the oropharyngeal dysphagias is due to the fact that, at this stage, many more neurological disorders can be implicated than in esophageal dysphagia (Barrett, Fullerton, Wyatt, & O'Neill, 1987; Kramer, 1988; Silverman & Elfant, 1979). Analysis of impaired swallowing has shown variations of neural organization within individuals which complicates assessment (Groher, 1984; Price, Jones, Charlton, & Allen, 1987).

CAUSES OF DYSPHAGIA

Dysphagia can be caused by a number of factors. Precipitating conditions include cerebral vascular accident, neurologic disease, head injury, tumors of the pharynx, and

head and neck surgery (Logemann, 1983; Weiden & Harrigan, 1986). With medical management of disease and increased longevity of life, there has been an increase in the incidence of pathophysiological problems with swallowing (Sheth & Diner, 1988). Gerontologic conditions, with no other symptoms, have been responsible for dysphagia (Elliott, 1988).

In their list of causes for dysphagia, Merlo & Cohen (1988) include peripheral pathologies, such as poliomyelitis, and problems of neuromuscular transmission, as in myasthenia gravis. Bosma (1986) includes diabetes. Neuroleptic drugs which block dopamine transmission, resulting in tardive dyskinesia, can also impair the swallow (Craig, 1980; Groher, 1984; Weiden & Harrigan, 1986). Weiden and Harrigan state that 50% of patients with Parkinson's disease also have dysphagia.

Since a normal swallow combines voluntary and involuntary actions of the central nervous system, neurological disorders will have various types of effects and degrees of improvement. According to Price et al. (1987), the patient with an impaired swallow has a "pattern of dysphagia." For geriatric patients, neurological and various other difficulties that are a part of their medical history may combine in a way that severely affects swallowing. For accurate diagnoses with consideration of the rapidity of a swallow, cine-radiography is recommended by W. J. Ravich, M.D. of the Johns Hopkins Swallowing Center (Simmons, 1986). The particular form of radiography used is videofluoroscopy which

can review the swallowing stages frame by frame following the radiological procedure. The importance of videofluoroscopic study for dysphagia diagnosis is noted by many experts as it can provide visual evidence of pharyngeal pooling, silent aspiration, pouches called "diverticuli," and other sources of dysfunction (Bruckstein, 1989; Kozak, 1983; Logemann, 1988a; Ravich, 1986).

RISK OF ASPIRATION

Critical situations arise when the problem swallow involves mechanisms that are near the larynx. In the pharyngeal stage, there can be reduction in constriction of pharyngeal muscles so that a percentage of food remains where it has the danger of being aspirated (Groher, 1984). "Pocketing" of food at the level of the vallecula is particularly problematic in terms of aspiration (Roberts, 1986). Sometimes dysphagia manifests itself in a problem called delayed swallow in which the mechanism triggering the swallow may be delayed from 1 to 10 seconds. Even if the larynx is functional, such a delay can result in the airway being open at the wrong time. Again, the patient may aspirate food. Normally, a cough could expel the aspirated material, yet a person with a neurological impairment or one following laryngectomy might not be able to do this (Logemann, 1983).

At the opening to the esophagus, there can be a contracted muscle in front of the bolus, or a cancerous obstruction. In this case, failure of the swallowing mechanism to

completely pass the bolus from the pharynx into the esophagus results in an aspiration risk from residual material (Groher, 1984). Swellings of mucosal areas, muscle incoordinations, and various other possibilities can impair transfer of the bolus to the esophagus (Roberts, 1986).

Although the above paragraphs focus on the pharyngeal and esophageal swallowing stages, disorders in the oral stage can also result in aspiration. Aspiration may be caused by reduced tongue control or from delayed or absent swallow triggering reflex (Logemann, 1983). In such cases, material (other than air) passes into the airway past the larynx and the true vocal folds into the lungs. The result can be aspiration pneumonia which is an important concern following stroke or head injury (Horner, Massey, Riski, Lathrop, & Chase, 1988).

Due to the body's ability to compensate, many people are unaware of their problem with dysphagia until conditions such as fatigue or the use of medication exacerbate the disorder. The danger in such instances may be referred to as "aspiration." It can also be called "choking." According to Simmons (1986), 8,000 to 10,000 Americans die each year as a result of "choking accidents." It is possible that undiagnosed dysphagia may be claiming numerous victims.

EVALUATION

Being aware of patients at risk for dysphagia is fundamental to prevention of the potential dangers of aspiration.

The seriousness of the dysphagic condition causes evaluation to be of extreme importance. Yet, those at risk can present with numerous varieties of symptoms. The neurologic patient with speech dysarthria may have reduced oral mobility. One in a confused mental state may not be able to give sufficient attention to the task of feeding. A stroke victim may have impaired coordination of the swallowing process, partial paralysis at the oral or pharyngeal levels, or unilateral vocal fold paralysis. Therefore, evaluation for dysphagia is warranted for any patient with any form of brain damage (Groher, 1984; Weiden & Harrigan, 1986).

Evaluation encompasses a wide scope. From medical history, including time of onset of swallowing difficulty, to the physical exam, often including videoflouroscopy, numerous symptoms may be present and should be noted and assessed. Some of these symptoms include muscle weakness, coughing, deficient respiratory status, lengthy meal taking, weight loss, and complaint of something "stuck in the chest" (Castell & Donner, 1987; Groher, 1984; Merlo & Cohen, 1988).

According to Weiden and Harrigan (1986), the two most important factors to evaluate are: (1) the gag reflex, and (2) mouth control of the bolus. Total assessment is needed of mastication (chewing) and deglutition (swallowing). Psychological factors are also considerations (Groher, 1984; Logemann et al., 1987; Meerhoff, 1985).

INVOLVEMENT AND TRAINING

SLP Involvement in Dysphagia Management

As mentioned above, many professionals can be involved with the possibly dysphagic patient. In 1987, the American Speech-Language-Hearing Association (ASHA) published an "Ad Hoc Committee on Dysphagia Report." This report contains material on both the involvement of SLPs with dysphagia and their training for work in this area. According to the ASHA committee, some SLPs have been involved with dysphagia since the 1930's and, as of 1987, 35% of SLPs were involved with dysphagia. Findings showed that the degree of involvement is determined by the SLPs themselves. An individual SLP may elect to be involved with dysphagia clients and they may choose the level of involvement (Logemann et al., 1987).

According to Logemann (1988b), SLPs are involved in improving the safety and efficiency of the swallow. Speech therapy for dysphagia management is acclaimed in the British Medical Journal (Barrett et al., 1987). The SLP is regarded as an important member of the dysphagia team (Jones & Altschuler, 1987; Price et al., 1987).

SLP Training for Dysphagia Management

The ASHA committee outlined areas recommended for specific training in dysphagia, including fundamental knowledge of normal anatomy and physiology of speech and feeding systems. According to this committee, the clinician must

know the various conditions that can cause dysphagia along with the medical and surgical terminology that applies. Since many other health professionals may work in conjunction with the SLP, these areas of expertise need to be understood. The professional areas that interface include neurology, gastroenterology, physical and occupational therapy, otolaryngology, and pharmacology. Skill is needed with techniques for evaluation and management, as well as with counseling. Moreover, preparation includes knowledge of the involved neurophysiology for the individual patient and the current research. No information was given as to the actual hours of training recommended for mastery in clinical experience with dysphagia (Logemann et al., 1987).

Dysphagia management is a relatively new development in the career direction of SLPs. The high degree of professionalism to which the profession aspires, requires that responsibility to patient safety be considered of highest importance. Existing training programs for SLP clinicians may need to adjust to provide adequate preparation in this area. The type of preparation outlined by the ASHA Ad Hoc Committee (Logemann et al., 1987) may be the state-of-the-art protocol for this preparation.

CHAPTER III

METHODS AND PROCEDURES

METHODS

Subjects

This study surveyed the population of medically oriented SLPs in the state of Oregon. A questionnaire was sent to 96 SLPs selected from the listing of licensed SLPs in Oregon. A pre-screening from that list eliminated SLPs who were known to be practicing as public school clinicians without medical orientation. Responses were received from 77 SLPs. Participation included a sampling of hospital, nursing home, school, home health, and private practice clinicians. Criteria for the study included: (a) a masters or doctoral degree in speech-language pathology, and (b) involvement in dysphagia management. Fifty-two of those who answered the questionnaire met criteria.

Questionnaire

This study is of survey design. Thus, it utilized a questionnaire (Appendix A) that was mailed to potential subjects. Four major areas were addressed in the questionnaire: (1) demographic information about the subjects and general information about the settings in which they practice; (2) rating of subject's level of involvement with dysphagic

patients; (3) listing and rating of other professional disciplines involved with dysphagia in the subject's setting; and (4) designation of the amount, content, and specific type of education in dysphagia that subjects have received.

The first major area provided data about the subjects and their setting(s) in which they practice. They were asked to designate the primary and secondary settings in which they practice, their total caseload number, and the numbers of patients they had treated and evaluated for dysphagia in a month. The availability and amount of video-fluoroscopy swallowing studies in their setting were questioned. Subjects were asked to describe any dysphagia in-service training that they may have provided to other hospital staff personnel.

The second group of items gathered information on the degree of SLP involvement with dysphagia evaluation and with dysphagia treatment. This section had two parts that were identical in structure except that the first dealt with evaluation and the other with treatment. The subjects were asked to specify whether they were, in general, (a) primarily and singularly responsible for evaluation/treatment, (b) jointly responsible for evaluation/treatment with a team, but with primary consulting importance, (c) jointly responsible as an equal participant in a team decision, or (d) had no role in the management of dysphagia patients.

The third group of items involved a rating scale to provide information about the degree of involvement of

various other professionals also participating in dysphagia management. The subjects were instructed to designate the professional disciplines involved in dysphagia in the subject's settings. Then, they rank ordered them as #1, #2, or #3, according to the primary professionals involved in the evaluation leading to the diagnosis of dysphagia. This provided data to support the significance of the SLPs' current role in the field of dysphagia.

The final areas addressed by the survey were types, amounts, and content of professional training and education for dysphagia which each subject has experienced. The subjects specified the number of training hours in dysphagia that they have accumulated at a university, or at workshops, or on the job. Subjects were also asked to mark the questionnaire according to the places that have provided them training experiences, in particular content areas relevant to dysphagia management.

PROCEDURES

The questionnaire was mailed to the subjects with a letter of introduction (Appendix B). After three weeks, a postcard (Appendix C) was sent to those whose completed questionnaire had not yet been received. The postcard expressed thanks to those who had responded by already returning the completed questionnaire. It encouraged those who had not that it was still possible for them to participate. When a computer statistical analysis was completed, participants

were sent an overview sheet of the data to thank them for their interest and participation.

DATA MEASUREMENT AND ANALYSIS

An analysis of the survey results specified the distribution of each variable. Data collected regarding the type, content, and amount of preparation for dysphagia were displayed in tables. Relative frequency bar graphs showed the proportions of SLPs according to hours in training at each site of preparation.

Correlations were computed to determine the relationship, if any, between the degree of SLP involvement in dysphagia and the amount of preparation they have for this task. To answer this question, it was necessary to use more objective data than that provided under the rating scale of involvement. Respondents did specify the numbers of clients they evaluated and treated for dysphagia in one month. This data, then, provided information regarding degree of involvement that was used to correlate with the numbers of hours in workshop and university training. Due to the large range of data for on-the-job training hours, correlations were not computed for this variable.

A descriptive analysis was developed by grouping the subjects into four quartiles according to amount of hours in training. Means and medians were determined for the number of training hours in each of the three settings investigated, the number of patients evaluated, and the number of patients

treated. These evaluation and treatment figures were used as amount of involvement data. Graphs were constructed presenting a visual comparison of the relationship between the amount of preparation, by quartile, and the amount of involvement.

CHAPTER IV

RESULTS AND DISCUSSION

This study was designed to examine the preparation of SLPs in dysphagia management. Type of preparation was differentiated according to three settings: university, workshop, and on-the-job. Amount of preparation was determined by the number of hours accumulated by each SLP in each setting. The amount of preparation was compared with the amount of involvement for SLPs practicing dysphagia management to determine possible correlations. The information was collected through a questionnaire mailed to selected Oregon SLPs. Demographic data describing the respondents are presented prior to the data addressing the research questions.

RESULTS

Demographic Information

Of the 96 Oregon SLPs who were contacted with a dysphagia questionnaire for this study, 77 (80%) responded. These 77 SLPs indicated they work in a variety of settings, including hospitals, private practice, schools, nursing homes, and home health. Of the 77 respondents, 68% are involved in the management of dysphagia clients. The numbers

of respondents who work in specified settings and the numbers involved with dysphagia clients are shown in Table I.

TABLE I
FREQUENCY COUNTS OF OREGON SLP RESPONDENTS ACCORDING
TO PRIMARY SETTING OF PRACTICE AND INVOLVEMENT
WITH DYSPHAGIA

Primary Setting	Clinicians per Setting		Clinicians Involved with Dysphagia in Each Setting	
	No.	%	No.	%
Hospital	41	53	38	93
Private Practice	10	13	3	60
Schools	8	10	2	25
Nursing Homes	7	9	7	100
Home Health	2	3	2	100
Other	9	12	0	0
TOTAL	77	100	52	

Since 25 of the respondents (32%) indicated they had no involvement with dysphagia, they were not included in further analysis for the study. Information from questionnaires completed by the other 52 respondents (68%), who did specify involvement with dysphagia, provided the basis of the analysis.

The questionnaire respondents were asked to specify the number of years they have been involved with dysphagia management. Thirty percent designated their involvement has been

4 years or less; 42%--5 or more years yet less than 10 years; and 27%--10 or more years.

Other demographic information collected for each subject included (a) the number of patients evaluated for dysphagia the previous month, and (b) the number of patients treated for dysphagia that same month (see Table II). The majority of subjects had evaluated and/or treated 1 to 10 dysphagic patients during the previous month; 6 had seen none; 4 had evaluated over 20 patients; and 3 had treated over 20 patients. The mean number of patients evaluated was 8.1 with a standard deviation of 7.6 and a range of 0 to 29. The mean number of patients treated was 7.4 with a standard deviation of 7.1 and a range of 0 to 27.

TABLE II
NUMBER OF PATIENTS SEEN FOR EVALUATION AND
TREATMENT DURING ONE MONTH

Treatment	Number of Patients						m.i.*
	0	1-5	6-10	11-15	16-20	over 20	
Evaluated	6	19	15	1	4	4	3
Treated	6	22	9	4	4	3	4

*m.i. = Missing information.

Information regarding videoflouroscopy availability was sought, with 39 (75%) of 52 respondents specifying that videoflouroscopy swallow studies can be done in their primary setting. The mean number of videoflouroscopy studies indicated

by these 39 subjects for a one-month period was 2.97, with a standard deviation of 2.83 and a range of 0 to 15. The mean number indicated for three months was 8.6, with a standard deviation of 9.2 and a range of 0 to 50.

Subjects were asked to give a yes or no response to having provided in-service programs on dysphagia to other staff in their setting, with 42 respondents (81%) affirming. Forty-seven (90%) of the subjects involved with dysphagia hold masters degree in speech-language pathology and 5 (10%) hold doctorates.

Preparation for Dysphagia Management

The primary research question posed was: What is the type, content, and amount of preparation for dysphagia service that SLPs have obtained? To ascertain the type and amount of preparation for dysphagia management, respondents were asked to specify the approximate number of hours accumulated in dysphagia training according to site of training, i.e., university, workshop, on-the-job, and other. To display the data received according to type of training, bar graphs were designed showing the distribution of SLPs in each training site according to hours in training. See Figures 1, 2, and 3.

Figure 1. Frequency distribution of SLPs according to number of hours in training in the university setting.

Figure 2. Frequency distribution of SLPs according to number of hours in training in the workshop setting.

Figure 3. Frequency distribution of SLPs according to number of hours in training in the on-the-job setting.

The actual number of hours reported for training by place of training is presented in Table III (pp. 24-25) which displays the data according to subjects from the least to the most prepared, according to total hours in preparation. The table is shown in quartiles.

TABLE III

SLP HOURS IN PREPARATION FOR DYSPHAGIA MANAGEMENT
 ACCORDING TO SETTING, FOLLOWED BY 1-MONTH
 FIGURES FOR EVALUATION AND TREATMENT

Subj.	Univ.	Workshop	On-Job	Total	Eval.	Tx
Quartile 1						
37.	0	m.i.*	m.i.	0	5	5
45.	m.i.	5	m.i.	5	3	5
14.	0	4	2	6	0	0
51.	0	4	4	8	0	0
11.	3	10	m.i.	13	2	2
29.	m.i.	15	m.i.	15	25	25
46.	0	8	10	18	2	2
20.	0	10	10	20	2	2
23.	25	m.i.	m.i.	25	2	2
52.	10	8	20	28	1	0
22.	m.i.	32	m.i.	32	5	6
6.	6	30	m.i.	36	0	0
1.	25	12	m.i.	37	m.i.	m.i.
Quartile 2						
31.	0	16	24	40	3	3
42.	0	40	m.i.	40	10	4
43.	0	30	10	40	4	3
12.	m.i.	40	m.i.	40	4	7
19.	0	50	m.i.	50	6	24
28.	m.i.	50	m.i.	50	10	5
34.	0	50	m.i.	50	20	20
50.	m.i.	50	m.i.	50	m.i.	m.i.
13.	0	50	m.i.	50	25	11
24.	1	48	5	54	4	4
17.	0	60	m.i.	60	6	4
32.	10	10	50	70	4	5
18.	10	3	60	73	2	2

TABLE III
SLP HOURS IN PREPARATION FOR DYSPHAGIA MANAGEMENT
ACCORDING TO SETTING, FOLLOWED BY 1-MONTH
FIGURES FOR EVALUATION AND TREATMENT
(continued)

Subj.	Univ.	Workshop	On-Job	Total	Eval.	Tx
Quartile 3						
3.	m.i.	80	m.i.	80	0	0
47.	40	40	m.i.	80	20	m.i.
40.	40	20	25	85	6	4
27.	6	32	50	88	6	11
41.	50	5	40	95	5	4
10.	10	25	75	110	0	0
25.	60	16	40	116	10	5
30.	0	20	100	120	10	15
8.	4	16	100	120	14	12
9.	90	6	30	126	7	7
44.	m.i.	32	100	132	29	17
15.	12	30	100	144	5	5
7.	6	40	100	146	m.i.	m.i.
Quartile 4						
48.	15	50	100	165	0	1
39.	2	40	160	202	3	3
38.	0	8	200	208	25	25
49.	10	50	150	210	5	3
2.	2	12	200	214	9	9
5.	0	20	200	220	10	10
26.	40	16	200	256	10	10
16.	3	20	250	273	10	7
35.	m.i.	87	300	387	10	10
36.	m.i.	8	500	508	20	20
33.	m.i.	40	1200	1204	3	3
4.	0	24	10080	10104	7	7
21.	m.i.	30	12000	12030	20	18

*m.i. = Missing information.

Presentation of data for total hours of preparation according to quartile demonstrates increases of reported hours for workshop and on-the-job training. In each quartile

subjects reported 0 hours for university preparation. In the other two settings, however, no subjects reported 0 hours of training. In other words, 17 subjects reported receiving no training for dysphagia in university settings and all had received workshop and on-the-job training.

A significant number of data entries on questionnaires were missing. Although missing data are found for university settings in four quartiles, the number of missing data points diminishes with workshop and on-the-job settings with each successive quartile. For workshops, there are missing data only in the first quartile. Missing data decreases from 8 to 2 from the first to the third quartile for on-the-job preparation. The workshop and on-the-job training sites show no missing data in the fourth quartile which reflects those who are most prepared.

Based on quartile analysis, university means for hours of preparation range from 2.3 to 28.9 hours and medians range from 0 to 12 hours. Workshop means for training hours range from 12.5 to 38.2 hours and medians range from 10 to 48 hours. On-the-job means range from 9.2 to 1,965 hours and medians range from 10 to 200 hours. Means and medians for each of the quartile groups are displayed in Table IV, pp. 27-28.

TABLE IV

QUARTILE MEANS AND MEDIANS FOR HOURS OF PREPARATION BY
SETTING AND NUMBER OF PATIENTS EVALUATED AND TREATED

	Univ.	Workshop	On-Job	Eval.	Tx
Quartile 1					
$\bar{x}^*$	5.4	12.5	9.2	3.9	4.1
M*	0	10	10	2	2
RH*	4	11	5		
RP*				9	8
O Hrs*	6				
O Pts*				3	4
m.i.*	3	2	8	1	1
Quartile 2					
$\bar{x}$	2.3	38.2	29.8	8.2	7.7
M	0	48	24	5	4
RH	3	13	5		
RP				12	12
O Hrs	7				
m.i.	3		8	1	1
Quartile 3					
$\bar{x}$	28.9	27.8	69.1	9.4	7.3
M	12	30	75	6.5	5
RH	10	13	11		
RP				10	9
O Hrs	1				
O Pts				2	2
m.i.	2		2	1	2

TABLE IV

QUARTILE MEANS AND MEDIANS FOR HOURS OF PREPARATION BY
SETTING AND NUMBER OF PATIENTS EVALUATED AND TREATED
(continued)

	Univ.	Workshop	On-Job	Eval.	Tx
Quartile 4					
$\bar{x}$	8	31.2	1965	10.1	10
M	2	24	200	10	9
RH	6	13	13		
RP				12	13
0 Hrs	3				
0 Pts				1	
m.i.	4				

*Key: $\bar{x}$ = mean; M = median; RH = # reporting hours; RP = # reporting patients; 0 Hrs = # reporting 0 hours within quartile; 0 Pts = # reporting 0 patients; m.i. = missing information.

Guidelines from the Ad Hoc Committee Report on Dysphagia (Logemann et al., 1987) were used to compose a list of educational content areas necessary for preparation of dysphagia management. Next to this list were columns for each of the training sites that may have provided information on the various content areas. The respondents marked as many columns as they found appropriate to designate the places where they received training in each particular area. Eighteen subjects indicated they received training in all three settings.

The results showed that all training settings provided information on each content area. University settings

provided the most respondents with information on normal anatomy and physiology of speech structures, and neuroanatomy and neuropathologies when compared to workshop and on-the-job sites. Workshops provided the most SLPs with information about normal physiology and anatomy of swallowing, various conditions which might cause dysphagia, varieties of evaluation techniques, and current research in this area. On-the-job training was specified the most for medical and surgical terminology, expertise from other professions, varieties of management techniques, and counseling methods. See Table V, pp. 30-31.

TABLE V
NUMBER OF SLPs RECEIVING TRAINING BY SETTING FOR
VARIOUS CONTENT AREAS

Content Area	No. of SLPs per Setting			
	Univ.	Work shop	On-Job	m.i.*
Normal anatomy and physiology of speech struc- tures...				
in infants	33	30	19	5
in children	40	25	25	1
in adults	44	39	33	1
Normal physiology and development of chewing, suckling, sucking, and swal- lowing and the normal anatomy of structures invol- ved in these functions	33	45	32	1
Medical, behav- ioral, and psy- chological con- ditions which may cause disorders of suckling, sucking, chewing, and swal- lowing	27	42	40	2
Medical and sur- gical terminology	29	31	47	2
Expertise avail- able from care professions involved in dys- phagia management	11	35	45	2

TABLE V
NUMBER OF SLPs RECEIVING TRAINING BY SETTING FOR
VARIOUS CONTENT AREAS
(continued)

Content Areas	No. of SLPs per Setting			
	Univ.	Work shop	On-Job	m.i.
Neuroanatomy and neuropathologies	44	38	37	1
Variety of evalua- tion techniques and procedures and their implications for differential diagnosis of dysphagia	15	44	43	1
Variety of man- agement techniques and procedures and their implications for management of dysphagia	10	43	44	3
Counseling methods	15	30	39	5
Current research on normal and dis- ordered deglutition, its evaluation and treatment	3	39	34	2

*m.i. = Missing information.

Involvement in Dysphagia Management

Respondents were asked to rate their degree of involve-
ment in dysphagia evaluation and treatment. Forty-five (87%)
indicated primary or team leadership responsibility for
evaluating dysphagia (Table VI) and 42 (81%) indicated pri-
mary or team leadership responsibility for treating dysphagia

(Table VII). Only 2 (4%) SLPs had no role in evaluation and 1 (2%) had no role in treatment.

TABLE VI

SLP RATINGS OF THEIR INVOLVEMENT EVALUATING DYSPHAGIA

Involvement	No. of SLPs
Primarily and singularly responsible for evaluation	28
Jointly responsible with a team, but with primary consulting importance as a team leader	17
Jointly responsible as an equal participant in a team decision	5
No role in the evaluation of dysphagia patients	2

TABLE VII

SLP RATINGS OF THEIR INVOLVEMENT TREATING DYSPHAGIA

Involvement	No. of SLPs
Primarily and singularly responsible for management	19
Jointly responsible with a team, but with primary responsibility for management	23
Jointly responsible as an equal participant in team management	9
No role in the evaluation of dysphagia patients	1

Since dysphagia management often includes a team of professionals, the questionnaire included two lists of professional disciplines possibly involved, one for evaluation

and one for treatment. These were rank ordered #1 (most involved), #2 (second most), and #3 (third most involved). Resultant ranking placed the SLP as #1 involved for evaluation by 46 respondents (88.5%). The attending physician and nursing staff ranked second, and the third ranking for evaluation was divided among nursing, attending physician, physiatrist, and neurologist. On the treatment list, the SLP was ranked highest by 45 respondents (86.5%), nursing staff was second with 32 (62.5%), and third most was split among the other possibilities. A display of the professionals and how they were ranked is provided in Table VIII.

TABLE VIII

SLP RANKINGS OF PROFESSIONAL DISCIPLINES ACCORDING
TO THEIR INVOLVEMENT WITH DYSPHAGIA
FOR EVALUATION AND TREATMENT

Professionals	Evaluation		Treatment	
	#1	In top 3	#1	In top 3
SLP	46	51	45	50
Attending physician	2	21	0	10
Nursing staff	0	26	3	42
Occupational therapist	1	8	1	17
Physiatrist	0	11	0	8
Neurologist	1	9	0	3
Gastroenterologist	1	5	1	1
Physical therapist	0	1	0	1

Relationships Between Training and Involvement

An ancillary purpose for this study was to determine if a correlation exists between the amount of training SLPs had accumulated in the area of dysphagia and the amount of involvement they were providing in this same area. Pearson product moment correlation coefficients (r) were computed on various elements of the data to determine if any linear relationship might be present. The number of patients evaluated and treated was correlated with the number of university hours in dysphagia training with a resultant r of .16. This indicates no linear correlation. The number of patients evaluated and treated was correlated with the number of workshop hours in dysphagia training. The Pearson r for workshop training with this involvement figure was -0.02; again, no correlation. The number of patients evaluated and treated was correlated with the number of hours in dysphagia training, workshop, and university figures combined for a Pearson r of -.06. No correlation was established. The Pearson r was not computed using the on-the-job figures due to the extreme variation in range of data for this variable.

An analysis, which was more descriptive than the correlation, was done using the quartile groupings that were shown in Tables III and IV. The quartile arrangement of SLPs in these tables advance from the least prepared group in quartile one to the most prepared group in quartile four according to the total hours of training specified by

individual SLPs. The means and medians for treatment and evaluation figures of each quartile grouping were computed and are displayed in Table IV. Quartile one, representing those with least preparation across training sites, had a mean evaluation figure of 3.9 patients with a median of 2 patients. For treatment, this same group showed a mean of 4.1 patients and a median of 2. Quartiles two, three, and four demonstrated more patients at each level as the amount of preparation increased. The final quartile, composed of those more prepared for dysphagia management, showed figures for evaluation having a mean of 10.1 with a median of 10 patients. For treatment, this same group had a mean of 10 patients with a median of 9 patients. Figures 4 and 5 display the mean and median increases by quartile for evaluation and treatment.

Figure 4. Mean of one month figures for SLP evaluation and treatment according to SLP quartiles, grouped by total hours in dysphagia preparation.

*Key: X --- = Evaluation; O — = Treatment

Figure 5. Median of one month figures for SLP evaluation and treatment according to SLP quartiles, grouped by total hours in dysphagia preparation.

(Note: In each figure the higher number quartile represents increased total preparation in dysphagia management.)

DISCUSSION

Response to Questionnaire

The 80% return for the questionnaire for this study demonstrates a high level of interest among SLPs in the subject of dysphagia. The questionnaire was four pages long with over 100 variables to consider with space provided for comments (Appendix A). Yet, despite length and complexity, subjects provided the data described above. Their written comments give further evidence of their interest in dysphagia.

Comments ranged from simple support for this project to specific suggestions for dysphagia training programs. A number made comments regarding the persons who were most influential in their training. Three stated that the training provided through their university was inadequate and 8 commented that no dysphagia training was available at their university when they attended graduate school. At least 2 subjects stated that as hospital clinicians, work with dysphagia comprises 50% of their caseloads.

Nine (17%) of the 52 SLPs specifically stated that thorough training is necessary for work in the area of dysphagia. Two of the respondents went even further in their recommendations, suggesting that there should be certification for working with dysphagic patients. The central focus of the responses to the questionnaire was a clear affirmation that more training in dysphagia for SLPs is needed than what

has been provided in recent years. See Table IX for a sample of the comments.

TABLE IX

SAMPLE COMMENTS FROM SLPs REGARDING DYSPHAGIA TRAINING

Sample Comment	Frequency
More training is needed at the university level	10
Workshops have been helpful	9
Thorough dysphagia training is needed	9
Have done extra reading on dysphagia	8
Have attended Jeri Logemann seminar	3
University provided good practica	3
Separate certification is needed	2
SLP is best trained of all disciplines involved with dysphagia	2
Standards need to be increased	1

Demographic Information

The data presented in the results section represents the distribution of SLPs according to their primary work setting. It is important to note that 25 (48%) of these practice in a secondary setting as well. Those who work in private practice, hospitals, and home health often serve the nursing homes as a part of their practice. Therefore, although the data show only 7 clinicians work primarily in nursing homes, 6 others work in nursing homes in addition to

their primary site. In total, 13 of the respondents (25%) indicated they have contact with the nursing home population.

This information is valuable in consideration of the issues addressed by Castell (1986) and Siebens et al. (1986). As the geriatric population is increasing, the need for services in various settings is expanding as well. The availability of service should increase to meet the demand. It appears that SLPs who manage dysphagia in both hospitals and nursing home settings are involved in meeting this demand.

The questionnaire results showed this sample of SLPs working in dysphagia to be relatively new to this area of practice. Seventy-two percent have been involved with dysphagia management for less than 10 years. This 10-year span is significant as it corresponds with the decade of growth seen in the literature on this subject. In 1979, Silverman and Elfant published one of the first journal articles on dysphagia. At that time, there was little information available on the subject. It is not surprising, then, that few SLPs were involved prior to that time. It may be a commendation that this many have recently become involved. It may indicate that they are being responsible to their professionalism by keeping abreast of the literature, recognizing the need, and preparing themselves through available workshops.

In reference to the data collected on numbers of patients evaluated and treated, it should be noted that

frequency of patient load changes. More than one of the respondents commented that they normally work with dysphagia patients, but for various reasons had none on their caseload at the time they completed the questionnaire and one person mentioned that patient load varies throughout the year. The lowest figures included a clinician who was temporarily not managing a caseload. The highest figures included 3 SLPs who indicated they had treated over 20 patients for dysphagia in 1 month. This amount of involvement with dysphagia may seem high; yet, reportedly, it is not unusual in acute care settings. Allowing for these considerations, the numbers presented in Table II appear reasonable. The raw data given by SLPs for evaluation and treatment per month were used in the correlations and descriptive analysis presented.

The information regarding videoflouroscopy showed its availability in primary settings. The figure of 75% availability closely corresponds with the figure for the number of hospital SLPs working with dysphagia (73%). According to these figures, videoflouroscopy may be assumed to be available to the hospital clinicians plus one. As indicated by Bruckstein (1989), Kozak (1983), Logemann (1988a), and Ravich (1985), radiographic availability is appropriate and necessary for a hospital setting. But, what about the other sites, particularly nursing homes? For those who understand the importance of this diagnostic information, the lack of availability to 25% of these SLPs is a matter of concern.

Preparation in Dysphagia-- Settings

Important to note at the outset are various factors which may have skewed the reported figures for hours in training per setting. The questionnaire did not qualify the request for "hours in training." As a result, more than one subject reported figures in the thousands for on-the-job training. The on-the-job setting might have been qualified by asking for the number of hours with supervised training. As it was, the extreme range of figures reported made the on-the-job training results invalid for purposes of correlation.

Another problem with this portion of the data is a possible confusion between university practicum training and on-the-job preparation. Some master's level university programs provide training in hospitals for clinical experience. This particular hospital experience is technically preparation provided through the university. Yet, some subjects may have listed hours acquired in this manner as on-the-job training when it was actually university preparation. Verification of such an error was undetermined, yet plausible.

Despite these undetermined variables and considering recent advances in this area, it is not surprising that those SLPs who attended graduate school a decade ago had little preparation in this setting. Yet, the current prevalence of SLP involvement in this area may warrant specific training at the university graduate level with additional preparation in a medical setting. The university might

provide information about anatomy and physiology of the swallowing mechanism in regard to deglutition, the neurological aspects of swallowing dysfunction, as well as diseases and conditions precipitating dysphagia. Practica with patients would necessarily be provided in a medical setting.

Since every one of the subjects indicated they had received workshop preparation in dysphagia, it is evident that SLPs have been motivated to seek training from experts and authorities in this area. Such motivation is commendable. Workshops may be an appropriate way for previously prepared clinicians to obtain current information relative to specific diagnostic and treatment procedures for those SLPs who are involved in dysphagia.

Preparation in Dysphagia-- Content

As respondents worked through this questionnaire, they came to the section on content areas for training with many variables to consider. Just prior to this section they had computed the hours of training in preparation they had received in each setting. For each of the 12 content areas, they were asked to recall whether or not they had received training in that content area and at which setting or settings. Although such decisions were probably easy ones, they took time. It is possible that due to time constraints, some may not have considered each item as carefully as they otherwise might have. The reason for this supposition is that one would expect that, in some content areas, all

respondents would have checked university, yet this was not the case. Of the subjects responding, 82% indicated they did receive instruction in the normal anatomy and physiology of speech structures in adults at the university. However, 8 (15%) did not check this item on the questionnaire. Twelve (23%) did not indicate receiving instruction from the university in normal anatomy and physiology of speech structures in children; 19 (36%) did not check this area of instruction for infants.

Since every content area could be checked under each of the settings, most of the items were covered by at least one of the settings by the respondents. Yet, 5 (9%) left blank the content areas for knowledge of normal anatomy and physiology of speech structures in infants and for knowledge of counseling methods. Workshops were checked the most for providing instruction for normal physiology of swallowing, conditions causing dysphagia, variety of evaluation techniques and procedures for dysphagia, and current research regarding deglutition.

Due to the unknown variables discussed earlier, the content areas which were marked on-the-job more than the other two sites, may indicate less formal preparation in this setting than would be desirable. Those areas checked most for on-the-job preparation included knowledge of medical and surgical terminology, expertise available from other involved care professionals, the variety of management techniques and procedures, and their implications for management

of dysphagia, and counseling methods. The counseling area would certainly be improved with practice on the job; yet, as a prerequisite for dysphagia management, there is needed preparation prior to practice. Preparation prior to practice should also be available for these other three areas, especially for the variety of techniques with implications.

The question arises: What if such preparation is not available? It appears that the universities have not, in the past, provided curriculum to meet these requirements. They presently may not be doing so. Workshops are available, but they may not be the answer to the clinical training that is needed. On-the-job training allows for necessary experience with swallowing behaviors, yet may be lacking in preparing the dysphagia trainee for a number of basic content areas.

It appears that objective qualifications for dysphagia management are needed with a plan for developing them. Hospital practica, universities, and workshops might share in providing the necessary training. Videotapes, books, and journals with information on dysphagia should be available to students and professionals.

SLP Role in Dysphagia Management

The consensus among the SLPs questioned in the study is that they are providing the leadership in dysphagia management (see Tables V and VI). Combining the top two percentages on each scale results in the conclusion that 86%

of the SLP subjects have a leadership capacity in the evaluation process, and 80% have a leadership role in the treatment process. These percentages lead one to conclude that it is desirable for SLPs to be well trained in the management of dysphagia in medical settings.

A question arises with regard to this "leadership" capacity: Should the SLP be assuming this role? Price et al. (1987) present the SLP as an important part of the team process as does Logemann (1988b). Robbins (1985) states clearly, "speech pathologists are the most knowledgeable allied health professionals with regard to vocal tract neuromotor behavior, disease, and remediation" (p. 347). Yet it seems that a leadership role would require medical expertise in the area, as well as a functional knowledge of the other professional disciplines involved on the team. Are the 81% who specified a leadership role thoroughly qualified?

An example of a role given to SLPs is described by Jones and Altschuler (1987) at the VA Medical Center in Philadelphia. In two separate teams which were compared, SLPs coordinated activities and took responsibility for the consultation information from all the interdisciplinary professionals. The SLPs made sure that plans were carried out and they did the record keeping for the information regarding dysphagia. One team was under the supervision of the hospital Chief of Staff; the other was under the audiology and speech pathology service which "maintained

close working relationships with otorhinolaryngology, neurology, rehabilitation medicine, radiology, and gastroenterology" (p. 203). In both of these approaches to dysphagia management, the SLP provided leadership either under medical supervision or with close cooperation of medical staff.

Medical supervision would seem to be necessary for dysphagia intervention and, degree of medical involvement is an important consideration. It is possible that SLPs in Oregon are functioning in a capacity similar to that presented in the example above. Future research might explore this possibility.

Relationships Between Training and Involvement

The ancillary question this study proposed to answer was: What is the correlation between the degree of involvement that SLPs have in dysphagia and the amount of preparation they have for this task. The Pearson r 's which were computed showed no correlation with any combinations of the data. There is no linear relationship within the data to determine that those with the greater amounts of preparation for dysphagia are involved with more patients with this disorder than those who have less preparation. Neither does it show that those with little preparation have less involvement with dysphagia. It simply may be concluded that there is no significant linear correlation between the preparation of these 52 Oregon SLPs and the dysphagia service they provide.

Despite the lack of linear correlation, there appeared to be a relationship between the amount of involvement and the amount of preparation as demonstrated in the quartile analysis described above. By dealing with the numbers of hours reported according to four groupings, the outlying figures did not influence the data as a whole. The least prepared to the most prepared SLPs were represented and their data were appropriately compared to the reported figures for involvement, the number of patients evaluated and treated in 1 month. Missing data were also displayed. The descriptive analysis provided information which demonstrated the group with the least training in dysphagia had evaluated and treated the fewest patients. Furthermore, the SLPs with the most dysphagia training had evaluated and treated the most patients. Therefore, there is a demonstrated relationship between the amount of preparation and the amount of involvement of Oregon SLPs in dysphagia management.

The data seem to show that SLPs who are involved with dysphagic clients have a wide variation in amount of preparation that relates to the issues dealt with in this survey. The area of dysphagia is relatively new and preparation availability may be limited. Yet it is important to remember ★ the inherent risks for patient aspiration which make the issue of SLP preparation for dysphagia more crucial than preparation for many other disorders. As the numbers of dysphagia cases have increased, it appears that SLPs have met the demands for service with preparation through

workshop and on-the-job training. This researcher believes that training programs specifically for dysphagia need to be provided and a certification process developed.

Certainly, this study has not exhausted the implications of these important issues. Nor, has it dealt with every issue involved. It has presented an overview of the present situation for dysphagia management in Oregon.

CHAPTER V

SUMMARY AND IMPLICATIONS

SUMMARY

Speech-language pathologists (SLPs) have become involved in the evaluation and treatment of swallowing dysfunction, called "dysphagia." Increasing demand for servicing this disorder has resulted in management by various professionals. Due to their knowledge of the functioning of the larynx, pharynx, and oral cavity, SLPs may be particularly involved.

Dysphagia often involves aspiration risks. Consequently, adequate preparation for its management is necessary. A committee formed by the American Speech-Language-Hearing Association (ASHA) has recommended prerequisites for management of dysphagic patients (Logemann et al., 1987).

The purpose of this study was to determine the amount, type, and content of training acquired by SLPs presently working in dysphagia management, as well as their level of involvement. A questionnaire was sent to 96 Oregon SLPs. Of these, 77 (80%) responded, and 52 met criteria. The resulting data indicated that SLPs involved with dysphagia work in a variety of settings, including hospitals, nursing homes, home health agencies, and private practice. Seventy-two percent of the subjects have been involved with dysphagia

management for less than 10 years; 79% treated between 1 and 10 patients for dysphagia the month prior to filling out the questionnaire; and 81% have provided other staff in their settings with in-service on dysphagia. Responses indicated that universities have provided the least amount of preparation for dysphagia. Seventeen subjects specified no university training for dysphagia. All but one noted they had received some training through workshops. The amount of formal university or workshop background for dysphagia management was considerably less than on-the-job training. Eighteen subjects received training at university level, in workshops, and on-the-job.

The data show there are content areas which do not meet ASHA recommendations for dysphagia preparation. Deficient areas include normal anatomy and physiology of speech structures in infants, and counseling methods for dysphagic patients. Other content areas (e.g., normal anatomy and physiology of speech structures in adults) which would be expected to have been acquired through universities by all SLPs, were not checked by all subjects.

Responses dealing with the role of SLPs in dysphagia management demonstrate that SLPs tend to have primary responsibility in dysphagia management. Eighty-seven percent have a primary role in evaluation, and 80% in treatment. Other professionals ranked by respondents as having a high degree of involvement include the attending physician, nursing staff, occupational therapist, and physiatrist.

Correlations were computed between the figures provided for the number of patients treated and evaluated in one month and the number of hours in university and workshop training. The Pearson product moment correlation coefficient ($\underline{r}$) showed no linear correlation between these two variables. A descriptive analysis grouped the subjects by quartiles from least to most prepared in dysphagia management. Mean and median for evaluation and treatment amounts of these quartiles demonstrated a relationship between preparation and involvement. Medians for involvement figures increased from 2 patients in one month for least prepared SLPs to 9 and 10 for the most prepared.

It was apparent from the 80% response and the comments of SLP subjects that there is a high level of interest regarding dysphagia among Oregon SLPs. The respondents have obtained their training for dysphagia management from various combinations of university, workshop, and on-the-job settings. The study showed a relationship between preparation and involvement as well as a need for definitive standards to discuss and establish criteria prior to service provisions in dysphagia. Possibly, university programs and continuing education activities through workshops and on-the-job training should combine to provide for adequate preparation for dysphagia management.

IMPLICATIONS

Research Implications

According to survey respondents, on-the-job training has provided the majority of their preparation in dysphagia. The specific information and experience provided in this setting is unknown. Therefore, future research might investigate this area.

Exploration of dysphagia management in a broader geographical area might be surveyed with this or a similar questionnaire. It could be sent to a larger regional area or to samplings of SLPs in various parts of the United States. The quality of responses might be improved by reducing the size and complexity of the form. Some sections could be deleted, e.g., the rating scales of involvement. Other sections might be improved to elicit information such as the number of hours for on-the-job training that were supervised. Also, directions could specify that off-campus practicums through the university should be considered university training.

Another type of survey might be designed to investigate the current training in dysphagia provided by universities. It could be sent nationwide and might collect information regarding dysphagia courses and clinical practica being used to train SLPs in dysphagia management.

Clinical Implications

The current increase in SLP involvement in dysphagia, verified by this survey, have implications for all the sites that provide dysphagia preparation. More formal training in dysphagia is apparently needed. The medical risks inherent in the disorder necessitate that clinical supervision be provided in a medical setting, either in practica during graduate work or on-the-job work. Yet, background in anatomy and physiology of deglutition might be appropriate at the university graduate level. SLPs currently practicing may need this background provided through continuing education workshops. Results of this survey suggest that counseling methods have been overlooked in dysphagia training.

Counseling methods for dealing with dysphagia patients, including those whose condition is progressive, could be covered in a course dealing with counseling for other communication disorders. All in all, it seems reasonable that training in dysphagia should be provided by a combination of settings including universities, workshops, and on-the-job.

Indications are that a certification process may be warranted at the present time. The repeated statement of many respondents who provided comments was that "thorough training is necessary for dysphagia." Coursework and clinical practicum experience with specified numbers of supervised hours would be appropriate. Videotape training, presently available, might be incorporated with discussion following on diagnosis and possibilities of intervention

strategies. On-the-job training might follow a specified protocol for assessment. Proficiency levels should be established so that competency is established prior to independent patient contact.

It may be that in nursing home settings, clinicians * have limited contact with medical staff other than nursing. With medical backup less available, the proficiency standards for competency may be even more important in nonhospital settings. Certification through workshop alone may not be enough. Clinical competence requires direct patient contact under supervision. Dysphagia training programs in hospital settings are needed for those who have been practicing professionally with other disorders and need to become skilled in dysphagia.

The enthusiastic response to this survey highlights the fact that concern regarding dysphagia is increasing. It appears that SLP preparation for their involvement with this disorder may be improved. This survey has only begun to deal with many of the important issues relating to dysphagia. One issue should not be overlooked: many SLPs have sought expert direction through workshops to prepare themselves for dysphagia management. Through their involvement with dysphagia, these professionals are striving to provide their clients with the essentials for a functional life experience.

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APPENDIX A

QUESTIONNAIRE

Speech Pathology
DYSPHAGIA

1. Check the setting(s) in which you practice:

A. _____ HOSPITAL

(1) _____ IN-PATIENT

(2) _____ OUT-PATIENT

B. _____ NURSING HOME (care facility)

C. _____ HOME HEALTH

go to
ques. #2

D. _____ PRIVATE PRACTICE

(1) _____ medically oriented

(2) _____ both medical & non-medical

(3) _____ non-medical

E. _____ SCHOOLS

go to
ques. #22

2. If you checked more than one of the above, rank order the primary settings by listing them below:

#1 _____

Indicate the
no. of SLPs

#2 _____

in each setting.

3. I am involved with the management of dysphagia:

A. _____ YES

B. _____ NO

4. I have been involved with the management of dysphagia for _____ (how many) years.

5. Within the last month, I have participated in evaluating
_____ (how many) patients for dysphagia.
6. Within the last month, I have participated in treating
_____ (how many) patients for dysphagia.
7. Within this past month, _____ (how many) dysphagia
patients were seen by me for more than 10 treatments.
8. My total caseload (all disorders including dysphagia)
last month numbered _____.
9. My caseload last month involved _____ (how many)
patients whose problems include communication deficits.
10. Videoflouroscopy swallowing study can be done in my
primary setting:
 A. _____ YES
 B. _____ NO (go to #12)
11. In my primary setting, videoflouroscopy swallowing
evaluations were performed on _____ (how many) patients
this past month? _____ (how many) in the last three
months?
12. I have been involved in providing in-service on dysphagia
for other staff personnel.
 A. _____ YES
 B. _____ NO

If YES, please describe:

13. Cross out all the professional disciplines NOT involved in the evaluation and treatment of dysphagia within your setting:

<u>Evaluation</u>	<u>Treatment</u>
OCCUPATIONAL THERAPIST	OCCUPATIONAL THERAPIST
PHYSICAL THERAPIST	PHYSICAL THERAPIST
SLP	SLP
ATTENDING PHYSICIAN	ATTENDING PHYSICIAN
PHYSIATRIST	PHYSIATRIST
NEUROLOGIST	NEUROLOGIST
GASTROENTEROLOGIST	GASTROENTEROLOGIST
NURSING STAFF	NURSING STAFF

14. Rank order the list above on the left according to those which, in your opinion, are most involved with the dysphagia evaluations. Place a #1 in front of the professional who you would consider most involved, a #2 for second most and a #3 for the third most involved.

15. Rank order the treatment list as described in #14.

16. Rating Scale of Your Involvement (EVALUATION)

Check one:

- A. ____ Primarily and singularly responsible for evaluation.
- B. ____ Jointly responsible with a team, but with primary consulting importance as a team leader.
- C. ____ Jointly responsible as an equal participant in a team decision.
- D. ____ No role in the evaluation of dysphagia patients.

17. Rating Scale of Your Involvement (TREATMENT)

Check one:

- A. ☐ Primarily and singularly responsible for management.
- B. ☐ Jointly responsible with a team, but with primary responsibility for management.
- C. ☐ Jointly responsible as an equal participant in team management.
- D. ☐ No role in the evaluation of dysphagia patients.
18. Under the columns that follow, check the places where you have gained various training experiences. (Please specify those places that you check under the column labelled "Other,")

<u>Content of Training</u>		<u>Place of Training</u>			
		Univer- sity	Workshop	On the Job	Other (specify)
a.	Normal anatomy and physiology of speech structures and processes				
	in infants.....				
	in children.....				
	in adults.....				
b.	Normal physiology and development of chewing, suckling, sucking, and swallowing and the normal anatomy of structures involved in these functions.....				
c.	The medical, behavioral, and psychological conditions which may cause disorders of suckling, sucking, chewing, and swallowing.....				
d.	Medical/surgical terminology.....				
e.	The expertise available from care professions involved in dysphagia management.....				

Content of TrainingPlace of Training

	Univer sity	Workshop	On the Job	Other (specify)
f. Neuroanatomy and neuropathologies.....				
g. The variety of evaluation techniques and procedures and their implications for differential diagnosis of dysphagia.....				
h. The variety of management techniques and procedures and their implications for management of dysphagia...				
i. Counseling methods.....				
j. Current research on normal and disordered deglutition, its evaluation, and treatment.....				

19. Specify the approximate number of hours in training that you have accumulated in each place of training:

UNIVERSITY _____ hours

WORKSHOP _____ hours

ON THE JOB _____ hours

OTHER _____ hours

20. My mentor in the field of dysphagia is:

21. COMMENTS regarding training in dysphagia:

22. COMMENTS (other):

23. My highest degree is:

A. _____ BACHELOR'S

B. _____ MASTER'S

C. _____ DOCTORATE

24. I am licensed in the state of Oregon:

A. _____ YES

B. _____ NO

25. I am certified with the American Speech Language & Hearing Association:

A. _____ YES

B. _____ NO

APPENDIX B

COVER LETTER

Christine M. Gaynor
7005 SE Main
Portland, OR 97215

May 5, 1989

Mr. John Doe
PO Box 345
Portland, OR 97222

Dear Mr. Doe,

As a master's degree candidate in Speech-Language Pathology at Portland State University, I have chosen to gather information on the topic of dysphagia for my thesis. The enclosed questionnaire is designed to assess: (1) the present involvement with dysphagia of speech and language pathologists in Oregon, and (2) their background and training in dysphagia. Your completion of this questionnaire will provide data that will be anonymously compiled through the use of a code system.

If you have any questions, I would be pleased to receive a call from you. My number is (503) 222-2222.

I am personally grateful for your willingness to complete this questionnaire.

Please return it no later than May 30, 1989.

Appreciatively yours,

Christine Gaynor

APPENDIX C

FOLLOW-UP POSTCARD

Dear Mr. Doe,

In early May you received a Speech-Language Pathology questionnaire on Dysphagia. If you have already returned the questionnaire, thank you. If not, could you take the time to complete it? I would very much appreciate your input.

Christine Gaynor, B.S., Master's Degree Candidate in
Speech Pathology at PSU

7005 SE Main

Portland, OR 97215

(503) 222-2222

P.S. If you need a questionnaire, please contact me.