Partnering With Physicians: How Are Medical Speech-Language Pathologists Perceived?

by

Amber Carole Korstjens

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Approved by

Nancy Haak, Chair, Associate Professor of Communication Disorders
Lawrence Molt, Associate Professor of Communication Disorders
Daniel Phillips, Assistant Professor of Communication Disorders

Abstract

The purpose of this research was to gather insight regarding physicians'
understanding and view of the medical speech-language pathologist. Some questions
were compared to previous data presented in a prior survey by McCauslin, Florance and
Rabidoux in 1980. The sample population included 500 randomly selected family
medicine and internal medicine physicians within the state of Alabama. The physicians
were mailed a packet which included an information letter, a cover letter, the survey and
a pre-stamped envelope for easy return. Physicians were given thirty days to complete
and return the survey. While several results were presented in a descriptive manner, non-
parametric analysis was completed on the data sets using chi square analysis. The survey
included 145 respondents from both medical specialties. An encouraging response rate
illustrated that, overall, the results were positive in the physicians understanding and view
of the medical speech-language pathologist.

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CHAPTER 1

INTRODUCTION

Throughout the history of medical speech-language pathology there has been an

expansion in the scope of practice of the speech-language pathologist. As the scope has

grown to include persons with dysphagia, right hemisphere damage, or tracheostomy and

ventilator dependence, medical speech-language pathologists have interacted with an

increasing number of medical specialties upon whom they rely for patient referral. In

today's economy, it is vital for a successful practice in speech-language pathology that

physicians recognize and refer those patients who may benefit from services of speech-

language pathologists. A strong and positive partnership between the physician and the

speech-language pathologist is needed for the physician to begin and to continue to refer

his/her patients to speech-language pathologists.

The profession of speech-language pathology began with the eleven members

who founded the American Academy of Speech Correction in 1925. In 1947, two

decades after the founding of their organization, they renamed themselves the American

Speech and Hearing Association (ASHA). Since their humble beginnings as the

American Academy of Speech Correction, the group now known as ASHA has expanded

to be a society composed of many thousands of speech language pathologists and

audiologists. (Uffen, 2005)

Today there are nearly 110,000 certified speech-language pathologists in the

United States. Approximately 43,000 of those certified work in health care and social

assistance.   The total number is expected to grow to nearly 121,000 by the year 2016 (http://www.bls.gov/, 2009). Specific to the state of Alabama, the Speech and Hearing Association of Alabama (SHAA) was founded in 1959. SHAA was formed to unite those interested in communication disorders within the state of Alabama. According to the 2007 report from the Bureau of Labor Statistics, 970 speech language pathologists were employed in the state of Alabama.

The literature review will explore the history of medical speech-language pathology and discuss previous studies which have assessed the opinion or perception of speech-language pathologists. These studies have been given in random samples of the general public, educators and physicians.

This project updates and expands upon a survey which was completed in 1980 (McClausin, Rabidoux and Florance) and will evaluate the awareness and degree of insight physicians have with regard to the scope of practice, education, and place of employment of speech-language pathologists. The results concluded that while some physicians were familiar with speech-language pathologists' scope of practice and patient clientele, over half of the physicians were uncertain of the significance of speech-language therapy and speech-language pathologists' level of education. They were also generally unable to identify how to refer to a speech-language pathologist.

In order to promote a strong partnering between physicians and speech-language pathologists, periodic reassessment of the strength of that rapport is necessary. Following reassessment, it will be useful for those results to be augmented with data as to why and how any changes may have occurred. The results of this study will permit an informal discussion of those areas of speech-language pathology's public relations which are

currently successful and those which need improvement. While the data gathered will

represent the opinions of physicians only in one of the fifty United States, the

implications of the survey findings will provide insight as to the relative success and

failure of our partnering with these medical specialists. Furthermore, the findings will

point the way for future research perhaps across broader regions of the country, other

medical specialties, and other members of the healthcare team.

CHAPTER 2

LITERATURE REVIEW

History of Medical Speech-Language Pathology

In the midst of the tragedy of wounded soldiers in World War I and II came advancements in the practice of medicine and rehabilitation. Key rehabilitation professions of physical therapy, physical medicine and rehabilitation, occupational therapy, and speech-language pathology appear to have developed almost in parallel. During World War I (1917-1918), physical therapists – then called reconstruction aides– worked in medical centers such as hospitals and army rehabilitation centers. Mostly women, these reconstruction aides worked with a background mostly in physical education. This marked the beginning of physical therapy. Physical therapists evolved as a profession in part due to the polio epidemic (http://www.vault.com/nr/newsmain.jsp?nr_page=3&ch_id=250&article_id=27540923&cat_id=3332, 2009). Following the same timeline, occupational therapy records its origin in World War I due to the burgeoning industrialization, the crippling that resulted from the First World War and the rapid growth of populations located in the city and working in the factories. In the early to mid 1930's, Frank Krusen, M.D. began to research the uses of physical medicine. He initiated a program of physical therapy at Temple University and later moved to the Mayo Clinic in 1936, forming the Department of Physical Medicine. In 1938, "Dr. Krusen proposed the term physiatrist to identify the physician specializing in physical medicine"

(http://www.aapmr.org/academy/historyb.htm, 2009, p. 1). However, the formal name 'physiatrist' was not adopted by the American Medical Association until 1946. Meanwhile, "starting in 1936, Dr. Krusen and 13 other pioneering physiatrists began a decade of work to establish physical medicine and rehabilitation as a specialty" (http://www.aapmr.org/academy/historyb.htm, 2009, p. 1, http://www.usc.edu/schools/ihp/ot/what_is_ot/ot.html, 2007).

To some degree parallel with physical therapy, occupational therapy and physical medicine and rehabilitation, the Academy of Speech Correction was established in 1925, marking the beginning of the professional organization of speech-language pathology. The first great expansion occurred during World War II and in the years immediately following the war. The nation then realized a need for increased rehabilitation as the wounded soldiers returned from war. Literature reports that "this recognition led to the institution of speech, language and hearing services in military hospitals during the war , and after, in veterans administration medical centers" (Minifie, 1994, p. 5). As those individuals who staffed military programs returned to civilian life following the war, there was a movement toward the development of similar services in medical centers and agencies within the community (Minifie, 1994).

Along with the expansion of medical speech-language pathology, the number of medical specialties with whom speech-language pathologists interact has also grown. The profession of speech-language pathology has been defined by Ballew (1993) as an organization of nationally certified individuals who have been trained to provide speech and language therapy to persons who have communication impairments. Since Ballew's definition, the scope of practice of speech-language pathologists has greatly expanded in

recent years. According to Miller and Groher (1993), "during the 1970s and 80s, the clinical setting of speech-language pathologists began to evolve from what was once almost exclusively a public school and an ambulatory care population, to a practice in acute and chronic care medical institutions" (p.180).

As the scope of practice has expanded, the responsibilities of speech-language pathologists have also changed to meet the growing demands. For example, the speech-language pathologist should also provide services which will improve a patient's ability to swallow effectively in every day circumstances (Lubinski, 2003). As speech-language pathologists become increasingly involved in the medical community, the demand for a solid working relationship with physicians is all the more vital. One clinician summarizes the role of many medical speech-language pathologists nicely, "My day is probably not at all what you might think. I rarely address 'speech' disorders anymore because my focus is so predominantly on swallowing. Yes, that's right, swallowing. Eighty percent to ninety percent of my caseload involves swallowing disorders, otherwise known as dysphagia" (Kosteva, Schaller, Brian, and Strayer, 2005).   Medical speech-language pathology can be defined more specifically by the setting in which the speech-language pathologist works, what types of services are performed, and how those services are performed. Places of practice may include university medical centers, acute care hospitals, rehabilitation hospitals, outpatient clinics, skilled nursing facilities, home health, hospice, and private practice. Areas of expertise the medical speech-language pathologist offers to both adults and children include assessment and treatment of communication disorders caused by vascular, traumatic, infectious, neoplasms, and neurologic impairments that produce speech, cognitive/language, and/or swallowing

problems.   In response to the growth of speech-language pathology, the acute care

speech-language pathologist, not unlike most healthcare professionals, must now be well

equipped to offer comprehensive diagnostics and functional treatment in a brief period of

time (Kosteva et al., 2005).

According to ASHA, in 2006 nearly 35% of speech-language pathologists work in

health care settings. Medical speech-language pathologists have become more proficient

in and knowledgeable about medical equipment, such as radiographic techniques used in

evaluations to better plan treatment for a patient (Danhaur, David, Johnson, Meyer,

2009). An example of such radiographic techniques includes the modified barium

swallow study. Also, as speech-language pathologists have become more frequent

participants in formerly exclusively medical procedures such as endoscopy to assess

voice and swallowing, there has been more opportunity for interaction with physicians.

This further begs the question, "How are speech-language pathologists being perceived?"

Survey Data

In 1980, a survey was given to seventeen family practice residents in Columbus,

Ohio. The purpose of the study was to evaluate their understanding of aphasia and the

role of the speech-language pathologist in evaluation and treatment. The results showed

that while the residents had some idea of the types of patients speech-language

pathologists see, there were several key factors that were unknown. Nearly half of the

residents reported they did not know the appropriate process of referral. Also of

importance, while speech-language pathology's terminal degree is at the Master's level,

the medical residents generally thought that they worked with either a high school

diploma or a bachelor's degree. These findings illustrate that what speech-language

pathologists expect physicians to know may not be what they actually know. It is suggested that physicians who know about speech-language pathologists through experience or education are more likely to make a referral and/or tell their colleagues about the work done by speech-language pathologists (McCauslin et al., 1980).

Five years later, a survey was given to teachers, doctors, and nurses regarding the knowledge and opinions of speech therapy. For many of the professionals, speech-language pathologists were seen as working exclusively with children, and not reported to work with the adult population. Interestingly, those in the medical field were shown to have the least knowledge that speech-language pathologists are involved with patients who have communication disorder after stroke. In the way of education, it was generally thought that speech language pathologists complete a 4-year honors degree course. However, the most popular response to this question by teachers was that speech language pathologists complete a 3-year diploma (Lesser and Hassip, 1986).

With a similar focus on therapy, Moran and Pentz (1987) surveyed otolaryngologists regarding their opinions towards voice therapy for vocal nodules in children. It was reported that while there was a positive opinion about the role of speech pathologists in the use of voice therapy, 'a sizeable minority of respondents did not consider therapy an effective means of treat[ment],' in regard to vocal nodules" (Moran and Pentz, 1987, p.172). While this study is discussing vocal nodules, the responses by the otolaryngologists may suggest the lack of effectiveness some physicians may feel towards speech-language therapy.

In 2000, a study was completed of "primary care professionals' knowledge and attitudes on speech dysfluency in pre-school children" (Lees, Stark, Baird and Birse,

2000). The survey was conducted by way of a questionnaire and yielded a response rate

of 76.2%. Of the respondents, two groups were formed: Health visitors and general

practitioners. The British term *health visitor* refers to registered nurses who have

undergone additional medical training so as to be a part of a primary care medical team.

Health visitors reported referring an average of four children per year to a speech-

language pathologist due to their dysfluencies, whereas general practitioners reported

referring a median of zero children per year. The practitioners who had attended

postgraduate training in speech dysfluencies reported an average referral rate of five

children per year. Of those who did not attend postgraduate school, the average referral

rate was 1.9. These findings show that those who received additional education on

speech dysfluencies reported a higher referral rate, supporting the British Stammering

Association's emphasis on postgraduate level training of non-speech, speech and

language therapy professionals (Lees et al., 2000). However, not all surveys mailed to

physicians have yielded such a successful response rate. A survey was created to assess

the primary care physicians' knowledge, attitudes and practices pertaining to newborn

hearing screenings. The survey was mailed to 12,211 physicians in 21 states and one

territory, Puerto Rico. The survey yielded a 16.1% response rate, 1968 responses

(Moeller, White and Shisler, 2006).

Sanger, Hux and Griess (1995) surveyed educators about their opinions of the role

and performance of school speech-language pathologists. The educators specifically

included the following occupations: regular and special education teachers, elementary

school principals, and school psychologists. The survey was composed of 78 questions

addressing the respondent's professional and educational background. The questionnaire

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continued with questions pertaining to the respondent's interaction with speech-language pathologists, along with questions of opinion and effectiveness. The initial response rate was 43%. The results generally reported a positive opinion about services speech-language pathology offers. However, the results also suggested some uncertainty about the speech-language pathologists' role with particular student groups and the adequacy of their training and education. Interestingly, the results showed an inconsistency in the types of students who should receive services from the speech-language pathologist. Overall, even though there seemed to be a positive perception of speech-language pathologists, there seemed to be an uncertainty of the role of speech-language pathologists, along with the services they deliver (Sanger, Hux and Griess, 1995).

A decade later, Shaughnessy and Sanger (2005) created a survey which was mailed to 1036 kindergarten teachers in a single state. The survey's purpose was to assess the kindergarten teachers' perspective "regarding language and literacy development, roles and responsibilities of speech-language pathologists, and teacher-derived interventions in the classroom." The survey was composed of 36 questions, including demographics and items which addressed the teacher's professional training and job-related experience with speech-language pathologists. Shaghnesy and Sanger (2005) found a 46.68% return rate, as 484 teachers completed and returned the survey. Overall, the response towards speech-language pathologists in this survey was positive and overall views of the clinicians' therapy as effective. The teacher's responses suggested that the teachers generally valued the clinician's contributions. However, a particular respondent claimed that, "I don't feel that I have a very good understanding of what the [speech-language pathologist] actually does with the students. The students

leave to work with the [speech-language pathologist] and come back into the classroom"
(Shaughnessy et al., 2005, 75). Though this study was conducted with kindergarten
teachers, it further illustrates that although speech-language pathologists may assume
those individuals they work closest have a good representation of what speech-language
pathologists do, they may still be unclear.

The American Speech and Hearing Association conducted a survey in September
of 2004. They interviewed from a pool of 1,058 adults, ages 18 years or older, via the
telephone. Results show that nearly 70% of the adults responded that they were familiar
with speech-language pathologists, while 25% of the adults had not heard of the
profession. Generally, awareness of speech-language pathologists was relatively high;
however, the study shows that the number decreased when questioned about the
understanding of what speech-language pathologists actually do. Of those interviewed,
only 40% responded that they know what speech-language pathologists do (S. Slater,
personal communication, March 13, 2009). So, while the professional name may be
recognized, it is likely that individuals do not understand the scope of practice and the
role of the speech-language pathologists

In the field of Audiology, researchers assessed the knowledge of, experience with,
and attitudes towards newborn hearing screenings that pediatricians hold. The survey
was conducted in two manners, both through email and by paper-and-pencil survey. The
survey was given to 115 pediatricians and 21 responded: a response rate of 18.6%. The
results showed that most of the pediatricians that responded "had adequate knowledge
about, experience with, and generally positive attitudes toward [early hearing detection
and intervention programs]" (Danhauer, David, Johnson and Meyer, 2009). The response

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rate to this survey was significantly lower than some cited in this section, however this rate is probably at a level most frequently encountered.

Studies have been conducted in the neighboring field of nursing to evaluate general practitioners' knowledge of the role of nurse practitioners. The study was sent to 108 general practitioners in the Northland District Health Board, New Zealand. The response rate was near 46%, revealing positive responses from the general practitioners. The study also revealed that general practitioners reported themselves to be knowledgeable in the role of the nurse practitioner as well as having had some experience in working with nurse practitioners. While the general responses were positive, some uncertainty was noted in the lack of knowledge about the role of the nurse practitioner (Mackay, 2003). This study received a positive response rate and showed interest from the respondents.

Although few studies have been conducted specifically regarding the physicians' perception of speech-language pathology, studies of similar interests and in neighboring fields presented here have shown a glimpse of the general uncertainty of who speech-language pathologists are and what they do. Literature has also revealed the lack of research completed in assessing the physicians' knowledge and understanding of speech-language pathology.

Survey Formatting

When conducting a survey, each survey should begin with a cover letter which explains to the respondent the importance of their participation in the research. To stress the importance of participation, literature provides three viewpoints which encourage the survey to be presented with a cover letter: the scientific method, the egoistic approach,

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and the social utility approach. The scientific approach suggests that results will not be accurate unless each person completes and returns the survey. The egoistic approach encourages participation and suggests benefit to the respondent if he/she participates. The final approach which may be taken is the social utility approach, stressing the value and importance of the study (Mangione, 1995). Individually, these approaches aim to engage the respondent in participation. These viewpoints may be expressed separately or collectively through the use of the cover letter. The letter provided by the Institutional Review Board as well as the personal cover letter will provide an explanation regarding the necessity of the research and the importance of an adequate sample.

When conducting a mail survey, there are three general principles that must be addressed: the right of privacy, informed consent, and confidentiality (Bradburn, Sudman and Wansink, 2004). The respondent may be concerned that their identifying information is being shared with the public, although "respondents in the vast majority of surveys are not 'at risk,' where risk is thought of as the possibility that harm may come to [them] as a consequence of answering questions" (Bradburn et. al, 2004, 15-16).

Literature suggests that the person sending out the survey, the interviewer, should be sure to inform the survey respondents of the general purpose of the survey (Bradburn et. al, 2006). Furthermore, the respondents should be fully aware of why they are being asked to complete the survey and how their responses will be used. These guidelines are in agreement with the concept of informed consent, implying that the respondents will know exactly what they are filling out, why, and what will be done with their responses. A formal written consent is not usually obtained, as participation is voluntary. If the

respondent completes the survey, it is assumed they have consented to participate in the survey (Bradburn et. al, 2004).

Research has shown that anonymous questionnaires which contain no identifying information, such as name or contact information, will be more likely to yield honest responses from those responding (Bradburn et. al, 2004; Mangione, 1995). Bradburn et al. (2004) defines anonymous forms as "questionnaires that do not obtain names or other critical identifiers, in order to assure respondent confidentiality. For anonymous forms to be effective, the respondent must believe the assurances of anonymity" (p. 347). Research has identified mail surveys as the second most anonymous possible (Bradburn et al, 2004). According to Bradburn and colleagues, (2004, 352), "demographic characteristics [include] the basic classification variables—sex, age, marital status, race, ethnic origin, education, occupation, income, religion, and residence—that characterize an individual."

Literature states that, "most questionnaires consist of some questions that have been used before and some new questions, although even the new questions may be adapted from earlier ones" (Bradburn et al, 2004, p. 23). Researchers have also suggested that it is most helpful to borrow--with credit--questions that have been successfully used. In asking a combination of new questions and previously-used questions, the surveyor may be able to compare data previously gathered with the data gathered from the new survey (Bradburn et al., 2004).

Survey questions should be divided into three groups: firstly, questions that ask about behavior or facts; secondly, questions that ask those that ask about knowledge; and finally, questions that ask about psychological states or attitudes (Bradburn et al., 2004).

The principal reason for these specific categories of questions is to differentiate and better understand how a variety of people rate the reputation of different occupations. Furthermore, the literature holds that it is important to clearly delineate the difference between the words "attitude" and "opinion". Attitude is "more often used to refer to a bundle of opinions that are more or less coherent and are about some complex object," while the word opinion "most often refers to views about a particular object such as a person or policy" (Bradburn et al., 2004, p. 121). Adequate distinction between these words may result in better clarity of the survey's objective.

There are two main categories of questions which may be used in a questionnaire. The first type of question is open-ended and the second is a closed-answer form of question. Research has shown that "numerical questions are generally the most difficult for respondents to answer" (Bradburn et al., 2004, p. 208). In addition, research has shown that while open-ended questions may be easier to write, when it comes to scoring and analyzing, they are much more difficult due to varying responses (Borque et al., 2002).

In creating each specific question, there are a variety of manners in which to word the questions and an equal variety of manners in which to ask for responses. However, in telephone surveys and many electronic surveys, the most frequently questions asked are yes~no questions. These yes~no questions provide a specific answer which can be translated into hard data estimates" (Bradburn et al., 2004, p. 131). A possible reason for why yes~no questions may be used so often is because it is the simplest form of a question (Mangione, 1995).

Checklists are often used when there is a long list of things within a group in order to allow the responder to answer more easily. The checklist is a varied form of the yes~no question. Most checklists used include only a box in which you check if the answer is yes. The concerns which arise with checklists is that there is no differentiation between a "'no' response from an 'accidentally skipped' response or a 'don't know' response" (Mangione, 1995, p. 9). A suggestion which may be made in this situation is to provide both a 'yes' and a 'no' box when using the checklist question type.

Another type of question is the multiple choice format. According to Mangione (1995), "the key to constructing a good multiple choice question is that the categories you offer should be mutually exclusive and should cover the range of alternatives that people would experience" (p. 11). It is also suggested to note whether the multiple choice question is either a single response question or a 'check all that apply' format (Mangione, 1995; Borque et al., 2002). Each multiple-choice/ multiple-answer question in this survey will specify itself by including the phrase 'circle any of the following' if multiple answers are requested. Bradburn et al. (2004) suggests that "multiple choice questions are the most popular type of survey questions because they are generally the easiest for a respondent to answer and the easiest to analyze" (p. 326). They also note that multiple choice questions which do not provide all possible responses may cause confusion and frustration to the respondent.

In surveys, the questions should be short, as "'brief questions are more valid questions because they are more likely to be read completely and less likely to have qualifying phrases and less susceptible to extraneous influences on the respondents' answers'" (Mangione, 1995, p. 17). Literature also claims that brief questions are less

inclined to biases produced by format or positioning of the response alternatives.

Mangione (1995) suggests that "one of the ways that people get into trouble," is to create questions which are too long and "use extraneous words or phrases that take up space but do not add anything essential to the question" (p. 17). He also suggests that when creating a survey, one should follow these considerations: define key terms, beware of expert jargon, beware of unclear referents of pronouns, avoid double negatives, and avoid adverbial questions constructions (Montagne, 1995). Finally he adds that, in keeping the questions brief, they should be unidimensional and address one issue. One should remember that "a good question leaves no ambiguity in the mind of the respondent. There should be only one correct or appropriate choice for the respondent to make" (Bradburn et al., 2004, p. 327).

When creating the wording of the questions, modifying adjectives and adverbs should be excluded because they hold variable meanings and may be somewhat unclear. Examples of words which should be omitted from the questionnaire include: usually, often, sometimes, occasionally, seldom, rarely, many, most, numerous, a minority of, a substantial majority, a considerable number of, a large proportion of, a significant number of and several. Words such as *and*, *or*, *if* and *not* may sometimes be problematic, as they serve as red flags and may cause confusion for the respondent (Bradburn et al., 2004).

In regard to the overall format of the survey, the order in which the questions are placed is important. The ease and ability for the respondent to complete the questionnaire is largely determined by the format. Therefore, the questionnaire's format largely influences the quality of the data (Bradburn et al., 2004). They explain that

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"because answers are asked sequentially, answers to questions trigger thought in respondents' minds that may spill over and influence the answers to later questions. The potential biasing effect of the positioning of questions in a questionnaire has long been recognized as a problem in survey and market research" (p. 145).

Furthermore, Bradburn and colleagues (2004) argue that general questions are consistently shown to be influenced by placement, but the direction of the effect varies from question to question and is not steady throughout. Therefore, there may be more importance placed upon the direction of the effect due to the relation of the thoughts, which are triggered by the specific questions and how the respondents interpret the answers (Bradburn et al., 2004). Magnoine (1995) continues by saying that, "question order effect refers to the finding that the answers to a particular question may depend on its sequence in the questionnaire" (p. 32). While research has shown that order does affect interviewer-based methodologies, research has also shown that this problem is not as high when using mail survey because the respondent has the opportunity to preview the questions before responding and is able to change answers if so desired (Mangoine, 1995).

In discussing the word ordering effects, it may be inferred that there is significance in the manner in which the answers to the questions are arranged as well. Two tendencies may present themselves when answering questions, especially multiple-choice questions. The first tendency is to pick items at either the beginning of a long list, or the end. This is likely because people often do not read the entire list, and if they do so, they most likely remember those items listed last. The obvious way to avoid this problem is the make the list of choices shorter, rather than longer. There is also a

tendency for respondents to answer in the middle, or look for the average answer. This may be avoided by increasing the range of choices or to leave out the middle response and leave categories which are close to both sides of the middle answer so respondents may easily identify which answer they desire to choose (Mangoine, 1995). Bradburn et al. (2004,) emphasizes that the "transition between questions should be smooth. Questions should also be grouped so that they are similar" (p. 328), making it easier for the respondent to complete them.

Research has shown that when comparing the answers from general questions with the data of previous questions from other surveys, it may be best to place the general questions at the beginning of the survey, to decrease likelihood of influenced responses. For future research, "putting the general questions first also makes it easier for others to compare their data to yours" (Bradburn et al., 2004, p. 147-148).

In general, the questions should be formatted in 12-point font, with instructions distinguished with an alternate typeface. This alternate typeface may be bold type, italicize or capitalization. Questions should also be numbered. Numbering questions can help the respondent be aware if a question has been skipped (Bradburn et al, 2004: Mangoine, 1995). Finally, follow-up debriefings have indicated that some people find satisfaction in seeing they have answered a certain number of questions and are progressing thought the questionnaire at a satisfactory rate" (Bradburn et al., 2004, p. 284-285). Furthermore, a question should never be split between two pages, but should be placed on a single page. This simple arrangement will help the respondent to respond to each question appropriately, as the respondent is likely to believe a question has ended at the end of the page. Answers should be in a single column, reading down, and not

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horizontally across the page. Research has shown that this is easier for interviewers, respondents, and for data-processing personnel and suggests that reading across may cause confusion to the respondent as to where to record their answers (Bradburn et al., 2004). They also suggest that even though length of the survey is important, more important is the respondent's perception of the level of difficulty. When aligning the questions in a single column, this provides the questionnaire with more white space, giving the appearance of less clutter and making it seem easier to complete (Mangoine, 1995).

Mangione (1995) shares many facts which are important to increasing the likelihood of a good response rate. A key factor is postage. It is very important for the interviewer to keep in mind that, "to get a good return rate you have to supply the respondent with a return envelope, already addressed to you, and return postage" (Mangoine, 1995, p. 64). When the return postage is placed on the return envelope, subtle pressure is then placed on the respondent to send the completed survey back, so the stamp will not be wasted. Furthermore, the shorter the questionnaire and the easier it appears to the respondent, the likelihood of response rate increases (Mangione, 1995; Borque et al., 2002). Research also supports that, "all self-administered questionnaires should be printed on paper of sufficient quality that the print or writing on the reverse side cannot be seen. Forms that are blemished in any way or that are difficult to read because the ink is too light should not be used" (Bradburn et al., 2004, p. 307).

The respondent should be made aware of the deadline, encouraging the timely response and return of the survey (Mangoine, 1995). Upon completion of the survey, a

'thank you' page should be attached to express appreciation to the respondent for taking time to complete the questionnaire (Bradburn et al., 2004).

Literature argues that mailed questionnaires are the most common manner for surveying physicians in areas of health services research (Cummings, Savitz and Konrad, 2001). According to Burt and Woodwell (2005), average response rates of health surveys from physicians range from 40-50%. Cummings et al. (2001; Glascoff, 2001) argues that a response rate of 50% is very good for mailed questionnaires. To broaden the range, Lusk, Delclos, Burau, Drawhorn and Aday (2007) report response rates for health professional varying from 16% to 91%. Response rates may vary widely depending on the purpose of the study, the way in which the survey is presented, the target population and the respondent's interest in the subject (Lusk et al., 2007). Lusk et al. conducted a mail survey of 3,529 nurses, occupational therapists, respiratory therapists and physicians. While their overall response rate was 54%, the physicians yielded the lowest of the participants. Reasons why a physician may choose to not participate are simply a lack of time, the perceived salience of the study, and/or concerns about confidentiality (VanGeest, Johnson and Welch, 2007).

Glascoff (2001) also suggests factors of the survey that may affect the response rate. These items include: shorter questionnaires and monetary incentives such as the use of postage stamps on both the outgoing and the return mail (Glascoff, 2001, VanGeest et al., 2007; Dillman, 2007). Elements such as "length of the questionnaire, wording of the survey questions, the inclusion of leading questions, and the ordering of the survey questions" have a heavy impact on the survey's validity and results (Cummings et al. 2001). Burt and Woodwell (2005) suggest that in part by the cooperation theory, if the

physicians knew the importance of the survey, they would be more likely to participate in

the survey because there would be benefit for both themselves and the survey.

Summary

These major references cited above were considered throughout the development

of the survey and the survey packet. The following chapter will discuss in depth the

manner in which the information gathered from the literature has been applied.

CHAPTER 3

METHODS

Subjects

The respondents from a list of 500 physicians served as the subject population for

this thesis project. These physicians were randomly selected from the list obtained from

the Medical Association of the State of Alabama's public website. All family practice

and general internal medicine physicians were obtained through this agency. The

survey's purpose was to describe how internists and family practice physicians within the

state of Alabama view their success in partnering with medical speech-language

pathologists, and their understanding of our scope of practice and educational

background.

Survey and Crafting of the Questions

The survey packet, which was mailed to each physician, included: a cover letter,

the survey and a pre-addressed and pre-stamped envelope for easy return (Magnione,

1995; Glascoff, 2001; VanGeest et al., 2007). The cover letter (Appendix A) was be used

to notify the respondent of the purpose of the survey and to inform him/her that results

will be used to help maintain or improve the professional relationship between members

of their medical profession and speech-language pathologists. Furthermore, the cover

letter also informed the client that the survey is voluntary and anonymous, there was no

identifying information provided to the interviewer upon response. In accordance with

the literature and under the assumption that the return of a completed survey implies

consent, a formal written consent was not be requested in this survey (Bradburn et al., 2004). To ensure anonymity and privacy to the respondent, during the period in which the envelopes were being addressed, names and addresses were not removed from the Auburn University Speech and Hearing Clinic. In addition, the names and addresses were shredded immediately following the initial mail-out of the surveys.

Though identifying information was not used, demographic questions were presented in this survey (Bradburn et al., 2004).   This survey inquired about the respondent's general information such as gender, occupation and years of practice. The purpose of these questions was to better identify if there were statistical trends throughout the responses. The demographic information was used to help the author gain a better understanding of the respondent's answers and gather more information in regards to their interaction with Speech-Language Pathologists.

The survey being used in this study (Appendix B) was a compilation of questions that have been used previously in other studies, along with new questions (Bradburn, 2004). This survey was an updated and expanded version of a study completed nearly three decades ago (McClausin et al., 1980). Though some questions from this survey were borrowed from the previous study, the questions were updated to include the expanded scope of practice (e.g., swallowing disorders). The questions in the study were composed in a manner which sought to discover the knowledge that physicians have about who speech-language pathologists are, their scope of practice and place of employment, and the physician's clinical experiences or referral rates to speech-language pathologists.

In making the survey as user-friendly and brief as possible (Bradburn et. al, 2004), no numerical questions which ask the respondent to rank were used. Instead, the questionnaire was composed of closed-answer questions, such as yes~no, single answer multiple choice and multiple-answer multiple-choice questions. Many yes~no questions were used to provide ease to the respondent when completing the survey. When answering a multiple-choice question, the respondent was given a variety of choices and asked to choose their answers accordingly, sometimes being instructed to choose more than one answer. However, this survey was created in a way which presented the respondent with as little dilemma as possible. Since, according to the provided literature, checklists present an uncertainty of 'no' versus the accidentally skipped response, this survey did not contain checklists (Mangione, 1995).

This questionnaire was designed to be brief and composed of short, easy-to-answer questions. The language used in this survey is simple and the wording is concise (Mangione, 1995; Glascoff, 2001; VanGeest, 2007). The questions provided in this thesis omitted jargon pertaining specifically to the field of speech-language pathology or any other profession. Questions that lead to ambiguity were removed from the survey (Bradburn et al., 2004). This survey contained only questions which were easy for the respondent to answer along with questions in which the interviewer is most interested. In carefully wording the questions in this survey, all unnecessary, misleading, and or confusing verbiage have been removed or changed (Borque et al., 2002). The questions do not contain modifiers whose meaning may be subject to each individual (Bradburn et al., 2004).

In the formation of the questions presented in this survey, careful thought was given to the organization and formation. Each question was an individual thought and there should be no place where the potential biasing effect is present. In following with Mangoine (1995), this survey was mailed and the respondent was given the opportunity to preview the questions before completing the form. Every precaution was taken to remove the biasing effect and to reduce the triggering of certain answers due to word ordering.

The questions in this survey were organized so that the initial questions are demographic in nature (Borque et al., 2002). The respondent was presented with questions regarding their perception of speech-language pathologists. To facilitate a high response rate, the survey was composed of 20 questions and all necessary response envelopes and postage was provided for the respondents. For formality, university letterhead was used in addition to printing only on a single side of the page. The extensive review in how to formulate a survey was completed to facilitate a larger-than-average return rate from the physicians.

Analysis

The questions were divided into three categories: demographics of the physician, the physicians' knowledge of the speech-language pathologists' scope of practice, and the relationship between the physician and the speech-language pathologist. Responses are described in percentages. Tables have been used to describe ranges relative responses. Demographic information was clustered into subgroups to see if there is a correlation or if group differences are present, such as between physicians practicing sixteen or more years versus less than sixteen years.

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CHAPTER 4

RESULTS

The respondent's information from the surveys was entered into Microsoft Office

Excel 2007. The spreadsheet of individual survey responses permitted comparisons in a

number of ways, such as the subgroup comparison how physicians with over twenty-six

years of experience versus those with five or less years of experience viewed speech-

language pathologists as valuable team members of patient care teams. Microsoft Excel

was used to calculate percentages of responses and to create the graphic displays of the

data. The data listed below reflects the responses given.

1. What medical specialty do you practice?
   a.   a. Family Medicine   (41.38%)
   b.   b. Internal Medicine   (49.66%)
   c.   c. Other   (08.28%)*

   *The survey was mailed out to internal medicine physicians and family medicine physicians who
   were randomly selected from a list from the Medical Association of the State of Alabama.
   Therefore, the physician's who responded 'other' are believed to consider themselves in a more
   specialized practice, but fall under the medical specialty of internal medicine.

2. Have you or someone in your immediate family received services from a Speech-Language
   Pathologist?
   a.   Yes   (29.86%)
   b.   No   (70.14%)

3. How many years have you been practicing medicine?
   a.   0-5   (05.52%)
   b.   6-15   (22.76%)
   c.   16-25   (37.24%)
   d.   26+   (34.48%)

4. Are you affiliated with a hospital?
   a.   Yes, one hospital   (65.28%)
   b.   Yes, more than one hospital (31.94%)
   c.   No   (02.78%)

5. Approximately how many beds does your primary hospital have?
   a. 1-150   (35.86%)
   b. 151-300   (29.66%)
   c. 301-450   (20.69%)
   d. 451+   (13.79%)

6. How many Speech-Language Pathologists does your primary hospital employ?
   a. 1-2   (37.50%)
   b. 3-5   (05.56%)
   c. More than 5   (02.78%)
   d. I don't know   (40.28%)
   e. My hospital does not have a Speech-Language Pathologist (13.89%)

7. How often do you make referrals to a Speech-Language Pathologist?
   a. Daily   (01.38%)
   b. Weekly   (20.69%)
   c. Monthly   (32.41%)
   d. Rarely   (40.00%)
   e. Never   (05.52%)

8. How often do you interact with a Speech-Language Pathologist?
   a. Daily   (00.69%)
   b. Weekly   (09.66%)
   c. Monthly   (25.52%)
   d. Rarely   (51.03%)
   e. Never   (13.10%)

9. What is the minimum educational degree required to practice as a licensed Speech-Language Pathologist in Alabama?
   a. High School Diploma   (00.00%)
   b. Associate Degree   (01.56%)
   c. Bachelor's Degree   (42.19%)
   d. Master's Degree   (54.69%)
   e. Doctorate Degree   (01.56%)

10. Approximately how many Speech-Language Pathologists are certified in the United States?
    a. 25,000   (58.18%)
    b. 100,000   (33.64%)
    c. 300,000   (08.18%)

11. Circle any of the following locations in which a Speech-Language Pathologist might be employed:
    a. Private Practice   (82.07%)
    b. Assisted Living   (77.93%)
    c. Hospital   (97.24%)
    d. Skilled Nursing Facility (95.17%)
    e. University Clinics   (84.83%)

12. Circle the following patient conditions in which you might refer to a Speech-Language Pathologist?
    a. Aphasia   (86.90%)
    b. dysphagia (swallowing disorders) (93.79%)
    c. dementia   (45.52%)
    d. dysarthria   (86.90%)
    e. none of the above   (00.69%)

13. If communication deficits are present following a stroke or traumatic brain injury, when is the best time to refer to a Speech-Language Pathologist?
    a. Within the first 2 weeks   (95.17%)
    b. After 1 month   (04.83%)
    c. After 3 months   (00.00%)
    d. After 6 months   (00.00%)

14. Circle any of the following patients which may receive services from a Speech-Language Pathologist:
    a. Persons with difficulty pronouncing their sounds correctly   (98.62%)
    b. Persons with autism   (68.97%)
    c. Persons who stutter   (95.86%)
    d. Persons wishing to change their dialectal accents   (61.38%)
    e. Persons with chronic hoarseness   (66.21%)

15. Would you refer a patient who is unable to verbally communicate to a Speech-Language Pathologist?
    a. Yes   (87.23%)
    b. No   (12.77%)

16. Are Speech-Language Pathologists qualified to suggest non-oral feedings?
    a. Yes   (87.86%)
    b. No   (12.14%)

17. Are separate certifications required for Speech-Language Pathologists to work with children versus adults?
    a. Yes   (49.57%)
    b. No   (50.41%)

18. Do you view the Speech-Language Pathologist as a valuable team member in the care of the patient?
    a. Yes   (97.93%)
    b. No   (02.07%)

19. If a continuing education activity was available in your community about Speech-Language Pathology services, would you or your staff be interested in participating?
    a. Yes   (60.71%)
    b. No   (39.29%)

20. What is your gender?
    a. Female   (16.55%)
    b. Male   (83.45%)

Demographic Questions

Of the 500 randomly selected physicians, 145 completed and returned the survey within the allotted thirty day period, yielding a 29% response rate. When grouped into the corresponding medical specialties, 60 of the 183 family medicine physicians responded, a 32.79% response rate, while 156 of the 317 internal medicine physicians responded, a 26.50% response rate. In merely looking at the percentages, there were a

higher percentage of family medicine physicians who responded when compared to internal medicine physicians. However, it should be taken into consideration that the family medicine physician population was smaller than that of the internal medicine, thus creating an inequality in the two groups and causing concern when comparing the two. There will be more discussion of these two groups both independently and combined. The data presented below the survey which was mailed out along with the responses provided in percentages for each corresponding question and answer.

Physicians were asked to respond according to whether or not they have had clinical experience with a speech-language pathologist. In this case, clinical experience refers to either the physician personally, or a member of his/her family having received therapy services from a speech-language pathologist. Survey data shows that nearly a third of the subjects, 29.86% answered yes, while 70.14% answered no to the question. The majority, over two-thirds of the respondent, reported no clinical experience with a speech-language pathologist.

Survey question #3 asked, "How many years have you been practicing medicine?" Respondents were given 4 year groups from which to choose. Group 1, years 0-5, included 5.52% or respondents, while group 2, years 6-15, included 22.76% of respondents. These two groups will be discussed as one group further in the chapter. The eldest two groups are more similar in responses. Group 3, years 16-25, included 37.24% of respondents, while group 4, with 26 or more years of practicing, included 34.38% of respondents. Thus, the responses were heavily from the physicians who have been practicing medicine for 16 or more years.

Physicians were asked in question #4, "Are you affiliated with a hospital?"

Nearly 97% of respondents reported an affiliation with at least one hospital. Specifically,

65.28% reported affiliation with a single hospital, while 31.94% reported affiliation with

more than one. Only 2.78% of respondents reported not being affiliated with any

hospital. In regard to the size of the hospital, over 65% of respondents are practicing in a

hospital with 300 beds or less. Most respondents, 35.86% reported the primary hospital

having 1-150 beds. Closely behind, 29.66% of respondents reported the primary hospital

having 151-300 beds. One-fifth, exactly 20.69% of respondents claimed the hospital to

have 301-450 beds, while only 13.79% reported the primary hospital to have 451 or more

beds.

Furthermore, physicians were asked to report how many speech-language

pathologists the primary hospital employs. Of the responses, 37.50% answered 1-2

speech-language pathologists, 5.56% responded 3-5 and 2.78% reported that the primary

hospital employs more than 5 speech-language pathologists. The majority of respondents

reported uncertainty in the number employed and 13.28% reported that the primary

hospital does not currently employ any speech-language pathologists.

It is of interest to note the number of physicians who reported to be interested in

attending, or allowing their staff to attend, a continuing education activity to increase

knowledge and understanding of speech-language pathology services. Of the

respondents, 60.71% reported to be interested in such a course, while 39.29% reported no

such interest.

Physicians were also asked to identify their gender upon completion of the survey. Of the respondents, 83.45% were male and 16.55% were female. Both genders responded positively to attending such a course or activity.

Questions Regarding the Relationship with the Speech-Language Pathologist

In assessing the physician's relationship with the speech-language pathologist, respondents were asked to disclose how often he or she refers a patient to a speech-language pathologist. Nearly 55% of respondents report to refer their patients daily, weekly or monthly. Approximately 45% of respondents report to refer their patients rarely or never. This question was cross referenced with several other survey questions.

The following charts illustrate the responses in a more comparative manner. When broken down into medical specialties, of the family medicine physicians who responded, half reported that they that they rarely refer their patients to speech-language pathologists. For the remainder of responding physicians, 26.67% refer their patients monthly and 18.33% report to refer on a weekly basis. These results are depicted in Figure 1. Figure 2 shows that of the internal medicine physicians, who responded, most reported to refer their patients to the speech-language pathologist monthly, with the referral rate being 36.9%. Following closely, 33.33% internal medicine physicians reported that they refer rarely and 21.43% are reported to refer weekly.

Figure 1 – Referral rates of family medicine physicians to speech-language pathologists.
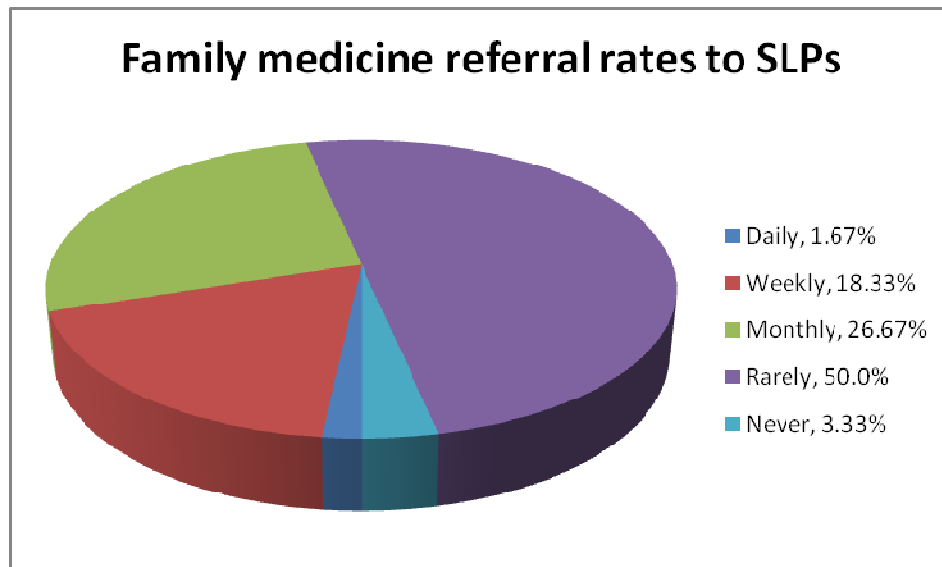
Figure 2 – Referral rates of internal medicine physicians to speech-language pathologists.
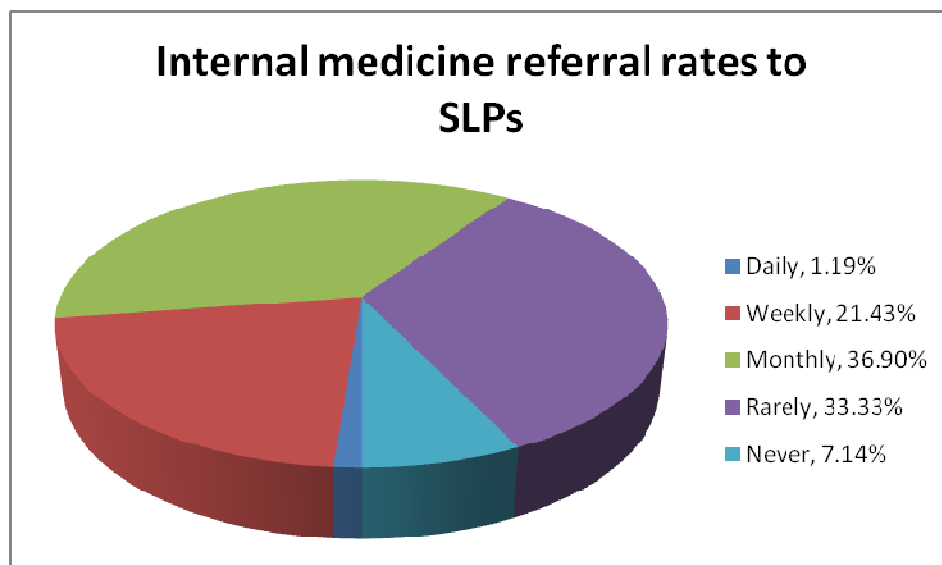
Physicians were also asked to report if they or someone in their family has received services from a speech-language pathologists to determine if there is a possible relationship between the response rate to speech-language pathologists and clinical experience with a speech-language pathologist. Of those who reported having a clinical experience with a speech-language pathologist, 44.19% claimed to refer their patients

rarely, while 48.84% refer patients on a monthly or more frequent basis. Of the
physicians who reported no previous services received from a speech-language
pathologist, 38.61% refer their patients rarely, while 54.45% refer monthly or more
frequently (See Figure 3 for detailed data).

Figure 3 – Referral rates of physicians with and without clinical experience with a
speech-language pathologist.
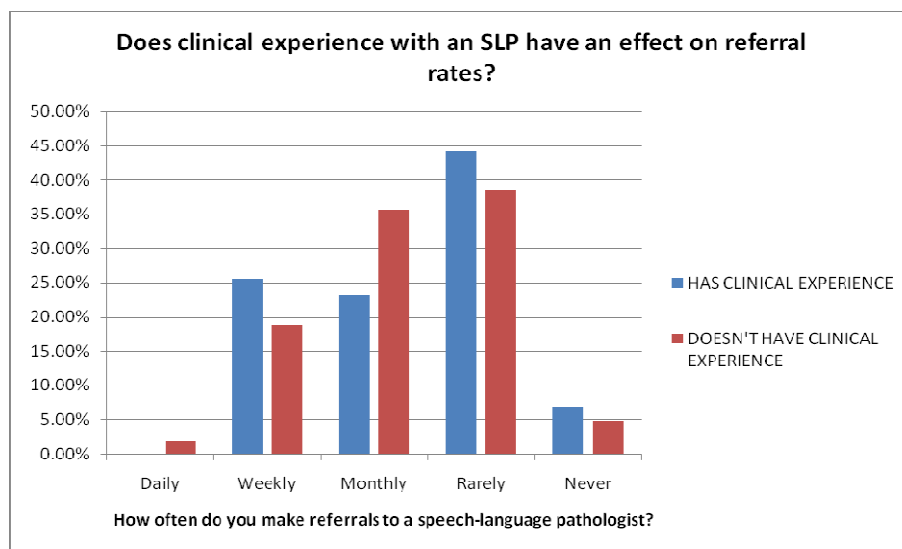
In looking at years of practice, physicians were not only questioned about
interaction, but how often they refer their patients to a speech-language pathologist. And,
when asked about the referral frequency, physicians with 0-5 years in practice responded
with 62.50% rarely, and 37.50% for monthly, weekly and daily. Of the physicians with
16-25 years in practice, 48.48% reported that they refer rarely, while 42.42% reported to
refer on a daily, weekly or monthly basis. The 16-25 years group held higher referral rate
for weekly and monthly at 57.41%. Similarly, those with over 26 years in practice
responded that 62.00% refer their patient's to a speech-language pathologist on a weekly
or monthly basis (As seen in Figure 4).

Figure 4 – Referral rates of physicians based on years of practice.
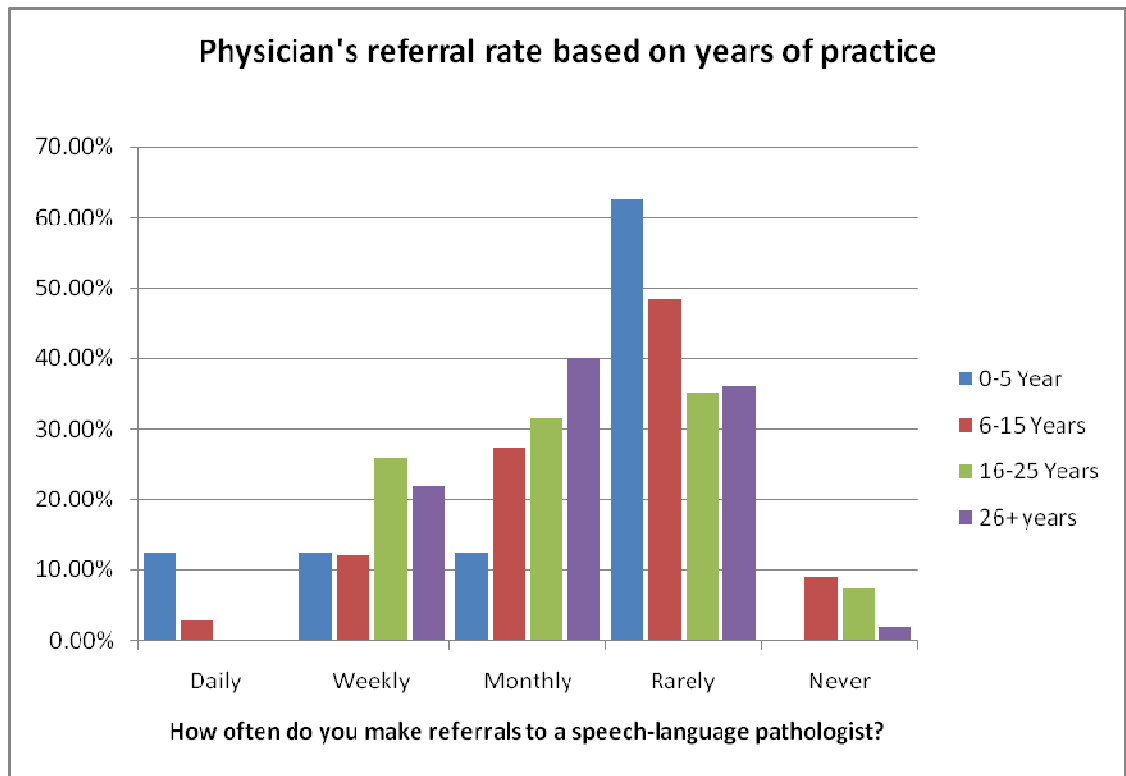
Throughout these questions the 16-25 years and 26+ years followed a similar pattern and were somewhat paralleled in responses. It is important to note the total number of responses from each group when looking at the data. Table 1 reflects the details of the respondents based on years of practice. It is shown that the majority of the responses were in the 16-25 years and 26+ years' groups.

Table 1 – Summary of respondents based on years of practice

Years Practicing Medicine	Number of Respondents	Percentage of Respondents
0-5 Years	8	5.52%
6-15 Years	33	22.76%
16-25 Years	54	37.24%
26+ Years	50	34.48%

Physicians were also asked to provide their gender, so as to see if there is a notable difference in the referral of patients to a speech-language pathologist between the male and the female physician. Of the respondents to the survey, 24 (16.55%) were female and 121 (83.45%) were male. The results are shown below in Figure 5 depicting the referral rates based on the physician's gender. Of the females, 41.66% report to refer their patients on a weekly or monthly basis, while 58.33% tend to refer either rarely or never. Male physicians report a higher referral rate, with 57.02% daily, weekly or monthly and 42.98% referring rarely or never. In addressing referral rates based on gender, please note that there was higher response rate in males than there were females.

Figure 5 – Referral rates based on gender.
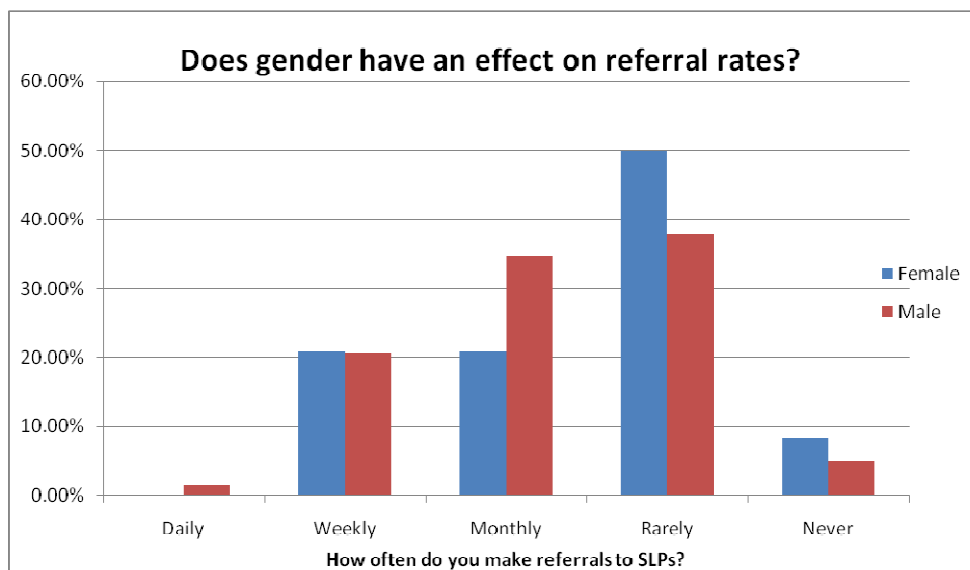
Along the lines of referral, is the topic of interaction. The respondent was asked to report how often he or she interacts with a speech-language pathologist. Of the respondents, approximately 64% of physicians interact on a rarely or never basis, while nearly 36% interact with speech-language pathologists on a daily, weekly or monthly basis.

The data gathered from the physician's referral rates was cross-referenced with the data from the referral rates to see if there may be a possible relationship. Figure 6 shows that of the family medicine physicians who responded, 60% reported to interact with speech-language pathologists rarely, while 18.33% reported a monthly interaction and 15% reported that they never interact with a speech-language pathologist. Of the internal medicine physicians, 45.24% responded that they interact with a speech-language pathologist rarely, 30.95% interact monthly and 11.90% never (Figure 7).

Figure 6 – Family medicine physician interaction with speech-language pathologists.
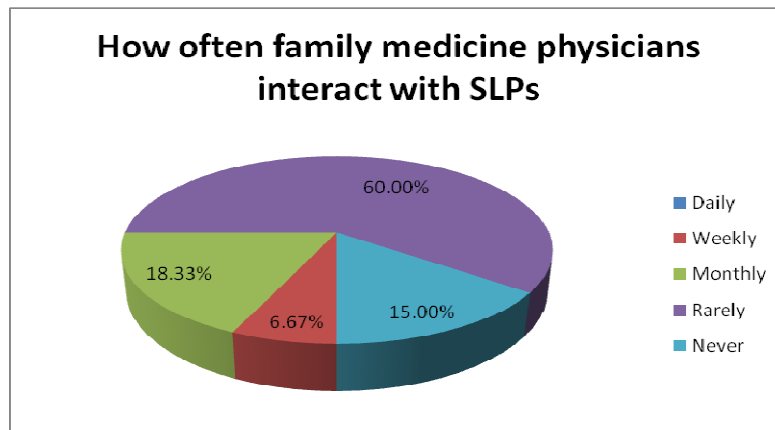

Figure 7 – Internal medicine physician interaction with speech-language pathologists.
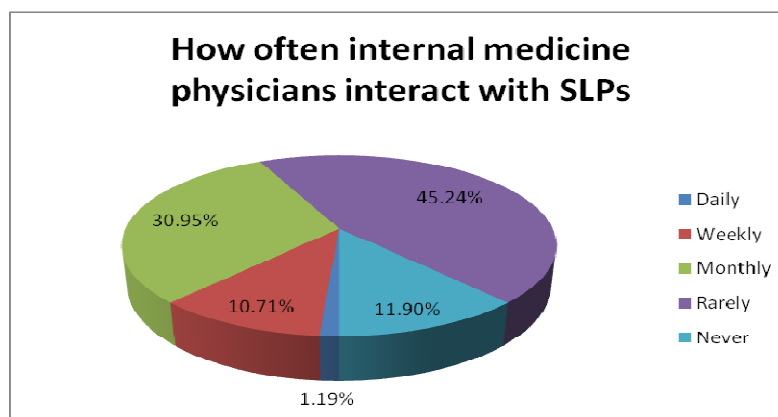
Furthermore, results were analyzed to compare reported clinical experience with speech-language pathologists to how often they interact with speech-language

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pathologists. As seen in Figure 8, of those who reported having some form of clinical experience with a speech-language pathologist, over half reported interacting with them rarely, at a 51.16% response rate. The following responses are very similar in percentages; 18.60% reported to interact with speech-language pathologist monthly, while 16.28% interact weekly and 13.95% reported to never interact with a speech-language pathologist. However, results show a different interaction rate in physicians who reported no previous clinical experience with speech and/or language therapy. Similarly to the physicians who reported having received such services, 51.49% reported interacting with the speech-language pathologists rarely, while 27.72% reported interacting on a monthly basis.

Figure 8 – Comparison of physician interaction and clinical experience.
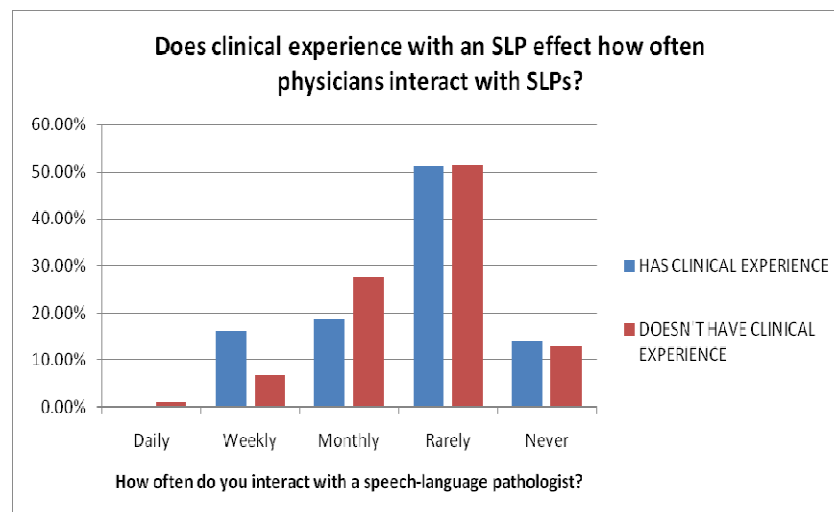
In considering specific patient conditions which physicians might refer to a speech-language pathologist, 93.79% of respondents reported referring patients with dysphagia to the speech-language pathologist. Dysarthria and aphasia were both reported by 86.90% of physicians, while only 45.52% of respondents included dementia as a possible patient condition which might be referred to a speech language pathologist. It

should be noted that a small percentage, 00.69% reported that none of the above mentioned patient conditions should be referred to a speech-language pathologist.

When asked about how often physicians interact with a speech-language pathologist, the most prevalent answer was rarely. Of those physicians in practice for 0-5 years, approximately 80% report that they interact with a physician either rarely or never, while on 60% of those who have been in practice 6-15 years interact rarely or never with a speech-language pathologist. For those in their later years, 16-25 years of practice, nearly 65% reported that they interact only rarely or never and of those who have been practicing 26 or more years, 60% reported interactions rarely or never as well. These numbers seem to be averaging around the same area. It is important to note when looking at the 0-5 years population, that there were only 8 participants in this group and therefore there should be no direct comparison between this group and the other populations. Additionally, the group who reported the most interaction with the speech-language pathologist on a daily, weekly or monthly basis was the 6-15 year group, closely followed by the 26+ years group and then the 16-25 year group (See Figure 9).

Figure 9 – Comparison of physician interaction with years of practice.
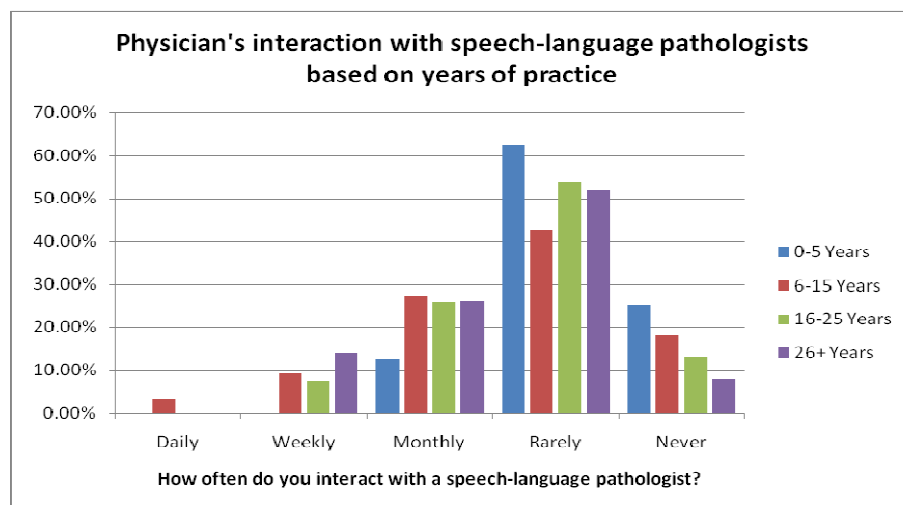
In further looking at the care of the patient, physicians were asked if they would refer a patient to a speech-language pathologist if the patient was unable to verbally communicate. Of the respondents, 87.23% reported that a patient under such circumstances should be referred, whereas 12.77% answered that such a condition should not be referred to a speech-language pathologist. This question will be viewed in two aspects. The first aspect is whether or not the physicians reports clinical experience with a speech-language pathologist (See Figure 10). Those who report having such experience had a response rate of 88.37% affirming that they would refer a patient who is unable to verbally communicate. Similarly, but slightly decreased, is the population who reported no such clinical experience and had only 83.17% response in favor of such referrals. Figure 11 shows the data in relation to specific medical specialties and their response to whether or not they would refer a patient who in unable to verbally communicate to a speech-language pathologist. Of the family medicine physicians, 88.33% answered 'yes' to the question and 82.14% of internal medicine physicians answered 'yes'.

Figure 10 - Physicians referrals of patients who are unable to verbally communicate based on the physician's clinical experience.
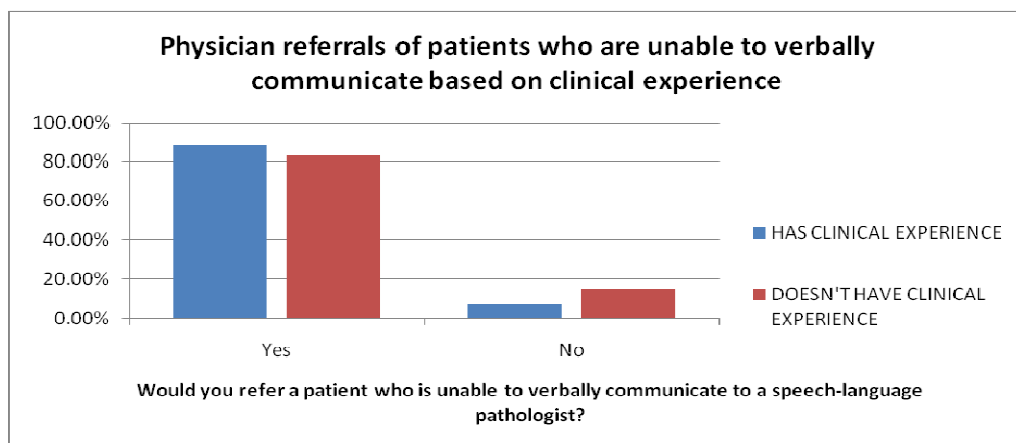
Figure 11- Comparison of referral of patients who are non-verbal with the medical

specialties.
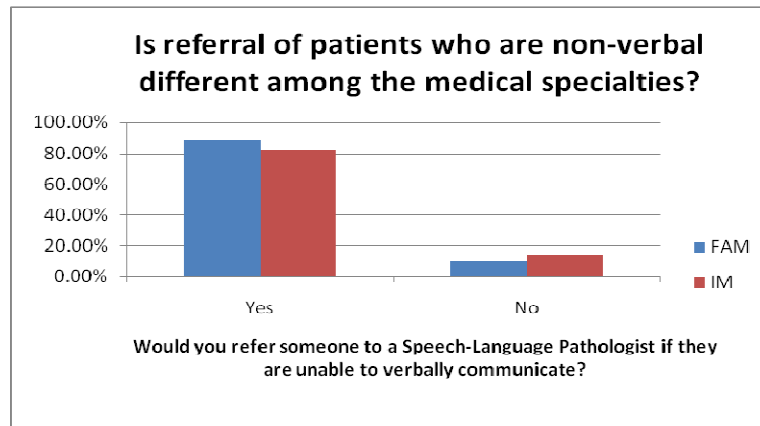
Finally, in discussing the physician's relationship with the speech-language

pathologist, physicians were asked to report on their view of the speech-language

pathologist's value and a team member in the care of patients. Physicians were

questioned regarding their view of speech-language pathologists as a valuable team

member in the care of their patients. The results were broken into medical specialties.

The first section examined responses based on the physicians' medical specialty. Of the

family medicine physicians who responded, 96.67% reported viewing the speech-

language pathologist as a valuable team member, while 3.33% reported not viewing the

speech-language pathologists as a valuable team member. Of the internal medicine

physicians who responded, the results were similar, with 98.81% giving the speech-

language pathologist value and 1.19% denying their value as a team member. Of the

physicians that responded, the percentages were comparable in agreeing that speech-

language pathologists are a valuable team member (See Figure 12).

Figure 12- The physician's view of the speech-language pathologist as a valuable team member based on medical specialty.
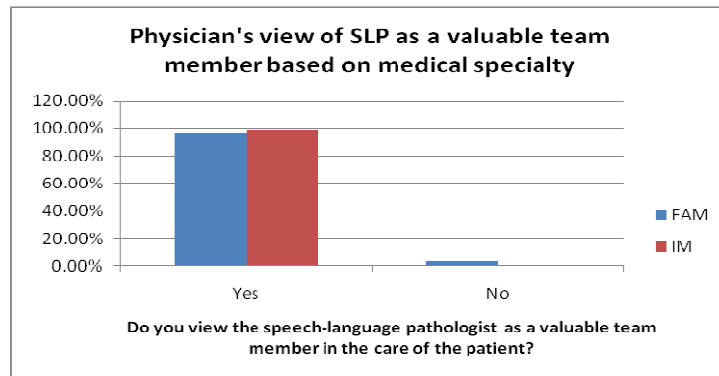
In addition to looking at the physician's responses based on medical specialty, results were also described in terms of the speech-language pathologist's value as a team member based on the physicians' history of personal or familial speech-language pathology services. Figure 13 shows that of the physicians who reported having received therapy services from a speech-language pathologist, 95.35% responded that the speech-language pathologist is a valuable team member. Similarly, 99.01% of those physicians who reported to have had no personal or familial speech and/or language therapy, also reported them being valuable team members in the care of the patient.

Figure 13 – Physician's view of the speech-language pathologist as a valuable team member based on clinical experience.
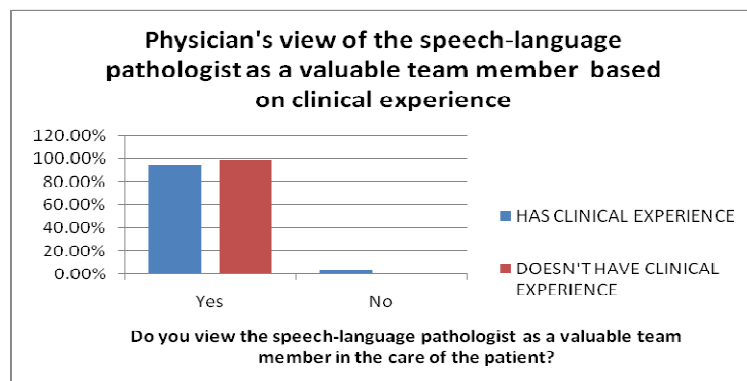
When addressing the value of the speech-language pathologist as a team member based on gender, the following results show that both the female and the male physicians generally view the speech-language pathologists as a valuable team member in the care of their patients. Female physicians reported over a 95% approval rate of the speech-language pathologist as a valuable team member. Additionally, the male physicians had over a 98% approval rate of a speech-language pathologist (See Figure 14 for more details).

Figure 14- The view of the speech-language pathologist's value as a team member based on the physician's gender.
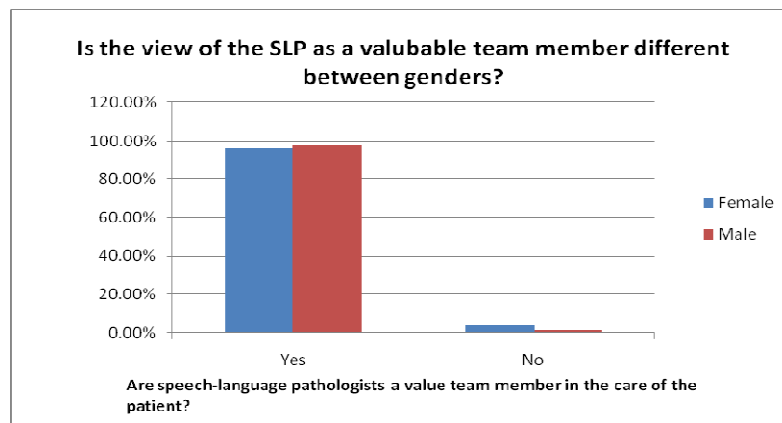
In addition to looking at the physicians' view of the speech-language pathologist's value as a team member based on the physicians gender, it is also interesting to view their perceived value based on the physicians' years of practice. According to Figure 15, the overall consensus is that physicians view speech-language pathologists as a valuable team member in the care of their patient. The group with the highest approval rating was that of the 16-25 years of practicing population, with 100% of respondents reporting that the speech-language pathologist is of value to the team. This high report is followed by the 26+ years of practicing population with 98.00% and

then the 6-15 years population with 96.97% of respondents reporting to view the speech-language pathologist as a valuable team member. These percentages are followed by the youngest group, 0-5 years of practicing, with 87.50% of respondents claiming to view the speech-language pathologist as a valuable team member in the care of their patients.

Figure 15- The physician's view of the speech-language pathologist as a valuable team member based on the physician's years of practice.
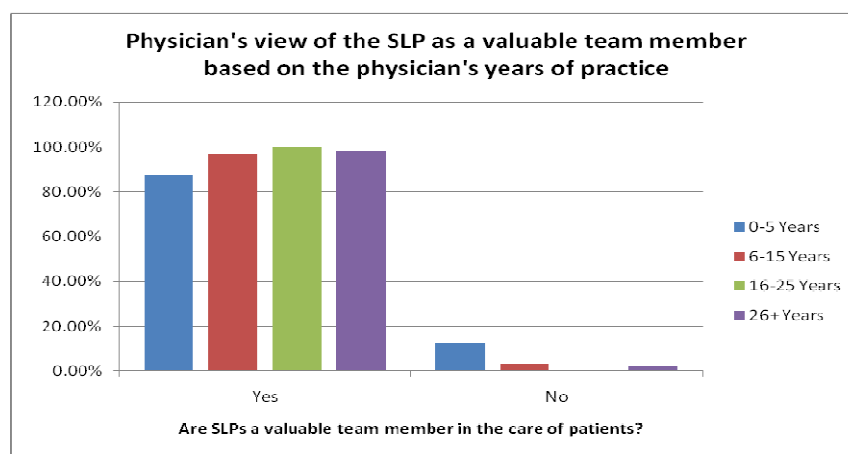
Questions for Knowledge about the Speech-Language Pathologist

In regard to physician's knowledge and understanding of the speech-language pathologist and their scope of practice, the results from several questions were cross compared with each other. The first question which will be addressed is question #9, "What is the minimum educational degree required to practice as a licensed speech-language pathologist in Alabama?" The majority of respondents, 54.69% reported a Master's degree, while the second most popular answer was a Bachelor's degree with 42.19% of responses. Nearly 2% of physicians reported both an Associate's degree and a Doctorate degree. No respondents reported the minimum requirement as a High School Diploma.

Responses to education degrees may be looked at in a variety of categories. The first is looking at the physician's clinical experience and the response to educational degrees required. The majority answer was Master's degree for both populations, however the percentages are closely tied. For those physicians who report to have clinical experience with a speech-language pathologist, 46.51% stated that the minimum educational requirement is a Master's, while 32.56% stated that the minimum educational requirement is a Bachelor's degree. For those physicians who reported no clinical experience with a speech-language pathologist, 48.51% of those physicians reported the minimum educational requirement is a Master's degree, while 39.60% reported a Bachelor's degree (See Figure 16). As seen below in Figure 17, the results are very similar when looking at the aspect of years of practice. The majority of respondents have answered Bachelor's or Master's degrees as also seen in Figures 18 and 19.

Figure 16- Physician's response to educational degree requirements for a speech-language pathologist to practice in Alabama based on clinical experience.
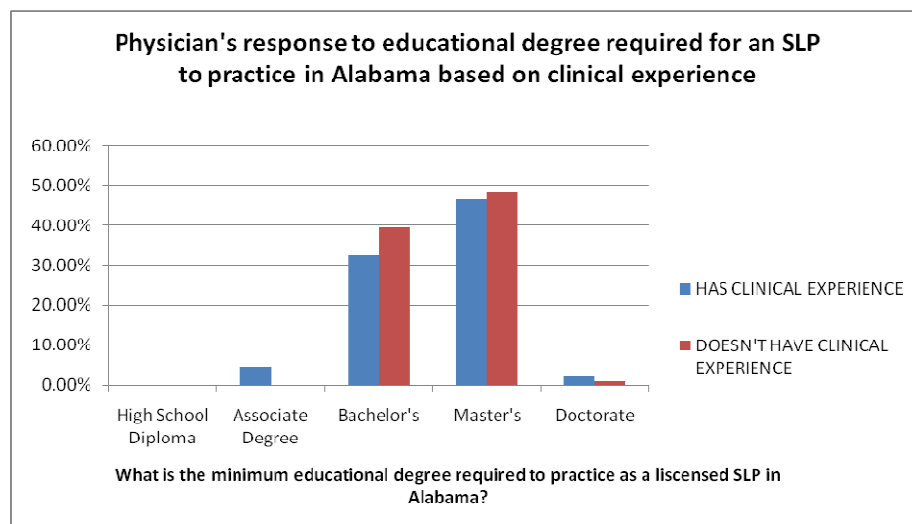
Figure 17- Physician's view of the minimum degree needed to practice as a certified

speech-language pathologist in Alabama based on years of practice.
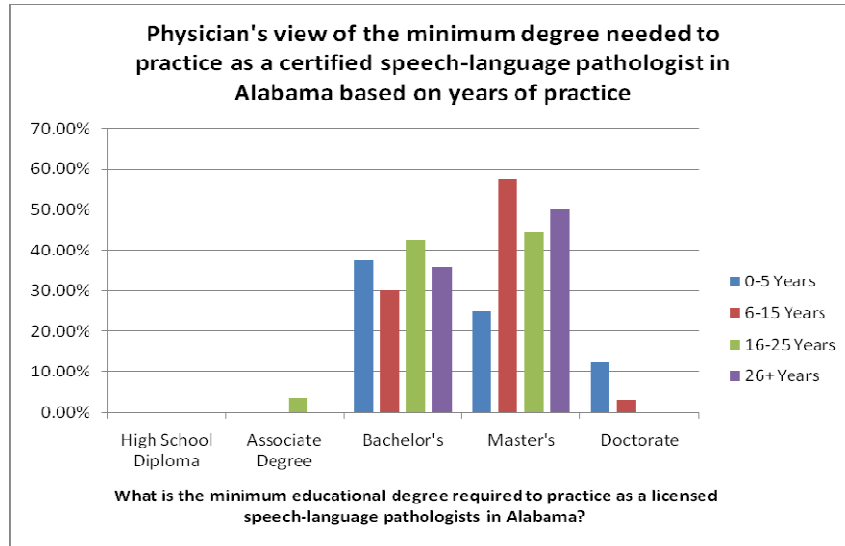
Figure 18- Physician's view of the minimum degree needed to practice as a certified

speech-language pathologist in Alabama based on family medicine physicians.
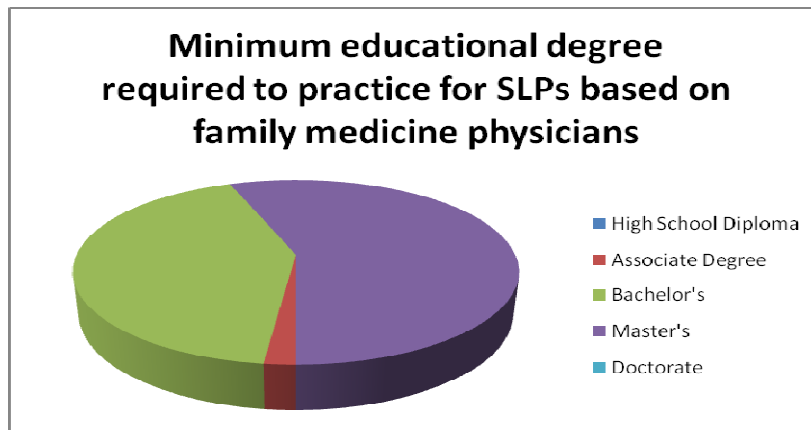
Figure 19- Physician's view of the minimum degree needed to practice as a certified

speech-language pathologist in Alabama based on internal medicine physicians.
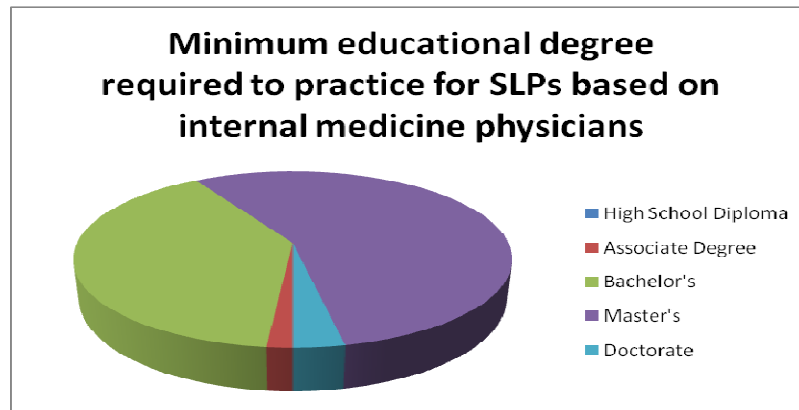
Physicians were asked to respond in regard to their thought of how many speech-

language pathologists are certified in the United States. The majority of respondents,

58.18%, reported 25,000 speech-language pathologists. Nearly a third of respondents,

33.64% stated 100,000 and just below 10% reported approximately 300,000 certified

speech-language pathologists.

Also of interest in the area of knowledge includes locations in which the speech-

language pathologists might be employed.   Question #11 gave the physicians an

opportunity to circle multiple choices. Most respondents, 97.24% included the hospital

and 95.17% reported a skilled nursing facility. Also of a high response, 82.07% of

respondents included private practice and 77.93% reported speech-language pathologists

to be employed in an assisted living community.

In regard to physician's knowledge of when is the best time to refer a patient to a

speech-language pathologists if communication deficits are present following stroke or

traumatic brain injury, the vast majority of respondents, specifically 95.17% reported that

patient's should be referred within the first two weeks. All other respondents, 4.83%,

responded that referral is best after one month.

In discussing the care of the patient, the participants were asked to respond to

what they view as an optimal time to refer their patients to a speech-language pathologist,

following a stroke or traumatic brain injury, if communication deficits are present, based

on the physicians amount of years in practice. The results reflect and overwhelming

response in referral of the patient within two weeks of the stroke or traumatic brain

injury. As shown below in Figure 20, the general consensus among the internal medicine

and family medicine physicians is that a patient should be referred earlier, rather than

later. The results are similar when broken down into the two medical specialties

surveyed in this study, internal medicine and family medicine. According to the chart

below, Figure 21, both medical specialties had a response rate of approximately 95%

responding that the patient should be referred within two weeks of onset.

Figure 20- Physician's view of an optimal time to refer patients who have communication

deficits following traumatic brain injury or stroke, according to years of practice.
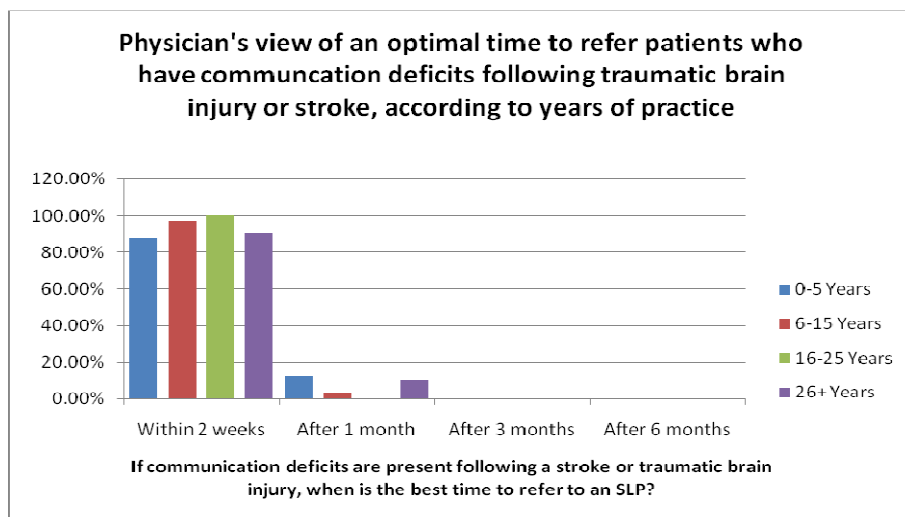
Figure 21- Physician's view of the best time to refer a patient who has communication deficits following stroke or traumatic brain injury based on medical specialty.
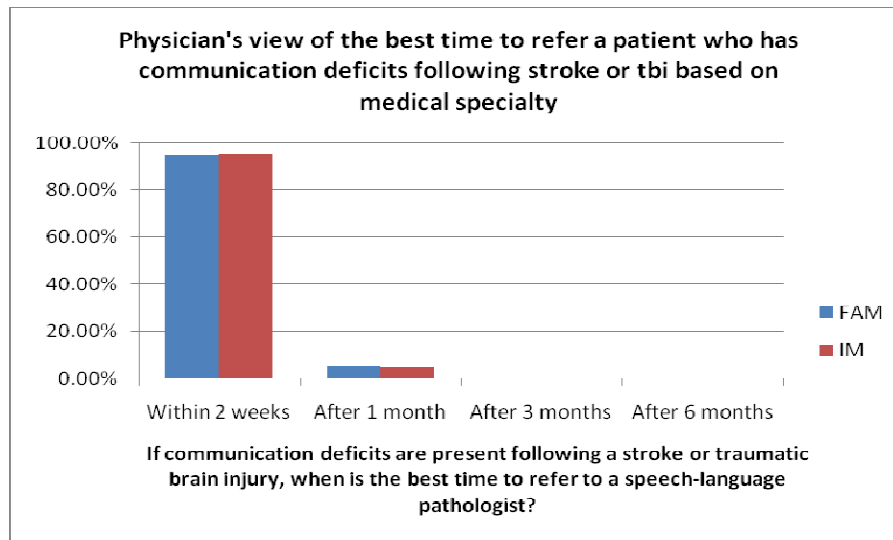
Physicians were presented with question #14 to assess the areas of scope of services provided by the speech-language pathologist, "Circle any of the following patients which may receive services from a speech-language pathologist." Two groups received a highly responsive rate: 98.62% included persons with difficulty pronouncing their sounds correctly, and 95.86% included persons who stutter. Nearly 69% of respondents reported persons with autisms may receive services from a speech-language pathologist. Similarly, 66.21% reported persons with chronic hoarseness and 61.38% included persons wishing to change their dialectal accents. In further addressing the speech-language pathologist's scope of practice, physicians were asked to report whether or not they view speech-language pathologists as qualified to suggest non-oral feeding. The results show that 87.86% responded positively, while 12.14% responded negatively.

In regard to certifications required, question #17 asked, "Are separate certifications required for speech-language pathologists to work with children versus

adults?" The results were similar, with 50.41% answered no, while 49.57% responded

yes. The physicians were nearly split on their views regarding separate certifications for

children vs. adults. This may be attributed to the specialized studies completed in the

medical field for certain populations. These results suggest that more awareness should

be raised that speech-language pathologists are qualified to work with a variety of

populations. As such information is spread, along with the increase in awareness and

understanding of the speech-language pathologist's scope of practice, a rise in more

frequent referral rates may be seen.

Chi Square Analysis

As displayed below, chi square analysis was conducted on the discussed areas in

order to determine if there may be a possible relationship between the compared data

sets. Only three results proved to be significant.

Table 2: Statistical results for questions compared with the physician's medical specialty.

Based on the physician's medical specialty:	ChiSquare	df	d
2. Have you or someone in your immediate family received services from a Speech-Language Pathologist?	1.15	1	0.2835
3. How many years have you been practicing medicine?	4.04	3	0.2572
6. How many Speech-Language Pathologists does your primary hospital employ?	2.54	4	0.6375
7. How often do you make referrals to a Speech-Language Pathologist?	4.68	4	0.3217
8. How often do you interact with a Speech-Language Pathologist?	**4.13**	**1**	**0.0421**
9. What is the minimum educational degree required to practice as a licensed Speech-Language Pathologist in Alabama?	1.47	4	0.8319
13. If communication deficits are present following a stroke or traumatic brain injury, when is the best time to refer to a Speech-Language Pathologist?	0	3	1
15. Would you refer a patient who is unable to verbally communicate to a Speech-Language Pathologist?	0.31	1	0.5777
16. Are Speech-Language Pathologists qualified to suggest non-oral feedings?	1.69	1	0.1936
17. Are separate certifications required for Speech-Language Pathologists to work with children versus adults?	0.03	1	0.8625
18. Do you view the Speech-Language Pathologist as a valuable team member in the care of the patient?	0.09	1	0.7642
19. If a continuing education activity was available in your community about Speech-Language Pathology services, would you or your staff be interested in participating?	12.57	1	0.0004
20. What is your gender?	0.05	1	0.8231

Table 3 – Statistical results for questions compared with the physician's gender.

Based on the physician's gender:	ChiSquare	df	d
1. What medical specialty do you practice?	0.05	1	0.8231
2. Have you or someone in your immediate family received services from a Speech-Language Pathologist?	0.03	1	0.8625
3. How many years have you been practicing medicine?	**12.9**	**3**	**0.0049**
5. Approximately how many beds does your primary hospital have?	2.79	4	0.5936
7. How often do you make referrals to a Speech-Language Pathologist?	2.72	4	0.6057
8. How often do you interact with a Speech-Language Pathologist?	3.91	4	0.4183
9. What is the minimum educational degree required to practice as a licensed Speech-Language Pathologist in Alabama?	2.44	4	0.6554
13. If communication deficits are present following a stroke or traumatic brain injury, when is the best time to refer to a Speech-Language Pathologist?	0.77	3	0.8566
15. Would you refer a patient who is unable to verbally communicate to a Speech-Language Pathologist?	3.07	1	0.0797
16. Are Speech-Language Pathologists qualified to suggest non-oral feedings?	0.47	1	0.493
17. Are separate certifications required for Speech-Language Pathologists to work with children versus adults?	1.49	1	0.2222
18. Do you view the Speech-Language Pathologist as a valuable team member in the care of the patient?	0	1	1
19. If a continuing education activity was available in your community about Speech-Language Pathology services, would you or your staff be interested in participating?	2.73	1	0.0985

Table 4 – Statistical results for questions compared with the physician's years of practice.

Based on the physician's years of practice:	ChiSquare	df	d
2. Have you or someone in your immediate family received services from a Speech-Language Pathologist?	0.37	3	0.9464
3. How many years have you been practicing medicine?	4.04	3	0.2572
6. How many Speech-Language Pathologists does your primary hospital employ?	11.71	12	0.4692
7. How often do you make referrals to a Speech-Language Pathologist?	18.39	12	0.1044
8. How often do you interact with a Speech-Language Pathologist?	9.29	12	0.678
9. What is the minimum educational degree required to practice as a licensed Speech-Language Pathologist in Alabama?	16.23	12	0.1809
13. If communication deficits are present following a stroke or traumatic brain injury, when is the best time to refer to a Speech-Language Pathologist?	6.91	9	0.6465
15. Would you refer a patient who is unable to verbally communicate to a Speech-Language Pathologist?	0.25	3	0.9691
16. Are Speech-Language Pathologists qualified to suggest non-oral feedings?	1.77	3	0.6215
17. Are separate certifications required for Speech-Language Pathologists to work with children versus adults?	1.77	3	0.6215
18. Do you view the Speech-Language Pathologist as a valuable team member in the care of the patient?	5.59	3	0.1334
19. If a continuing education activity was available in your community about Speech-Language Pathology services, would you or your staff be interested in participating?	7.75	3	0.0515
20. What is your gender?	**12.9**	**3**	**0.0049**

Table 5 – Statistical results for questions compared with the physician's clinical experience with a speech-language pathologist.

Based on the physician's clinical experience:	ChiSquare	df	d
1. What medical specialty do you practice?	1.15	1	0.2835
3. How many years have you been practicing medicine?	0.37	3	0.9464
6. How many Speech-Language Pathologists does your primary hospital employ?	9.1	4	0.0586
7. How often do you make referrals to a Speech-Language Pathologist?	0.43	1	0.512
8. How often do you interact with a Speech-Language Pathologist?	0.01	1	0.9203
9. What is the minimum educational degree required to practice as a licensed Speech-Language Pathologist in Alabama?	0.01	1	0.9203
13. If communication deficits are present following a stroke or traumatic brain injury, when is the best time to refer to a Speech-Language Pathologist?	0.59	3	0.8987
15. Would you refer a patient who is unable to verbally communicate to a Speech-Language Pathologist?	0.97	1	0.3247
16. Are Speech-Language Pathologists qualified to suggest non-oral feedings?	0.13	1	0.7184
17. Are separate certifications required for Speech-Language Pathologists to work with children versus adults?	0.96	1	0.3272
18. Do you view the Speech-Language Pathologist as a valuable team member in the care of the patient?	0.59	1	0.4424
19. If a continuing education activity was available in your community about Speech-Language Pathology services, would you or your staff be interested in participating?	1.46	1	0.2269
20. What is your gender?	0.03	1	0.8625

CHAPTER 5

DISCUSSION

In 1980, a survey by McCauslin et al. launched into the study of the perception of physicians of speech-language pathologists, particularly those who work in a medical setting. An extensive literature review uncovered that there were no other studies which focused on the same goal. The following comparisons will help to illustrate strengths and weaknesses in the partnership today. Furthermore, the results of this study will also introduce ways in which the partnership may be strengthened and further areas which should be studied in the future.

The present survey yielded an overall response rate of 29%, much higher than was expected. As seen in the methodology chapter, response rates from physicians when given a mailed survey may fall as low as 16%. There are a few possible factors which may have contributed to the positive response rate. It may imply that Auburn is held in high esteem within the medical population in Alabama, even though there is no school of medicine. Two additional contributing factors may include the more personal cover letter provided by the researcher (See Appendix A) and the information letter as required by the Institutional Review Board (See Appendix C). This response rate was very encouraging.

Concerning the physicians specifically, there were fewer family medicine physicians, 183, in the random selection for mail-out than there were internal medicine physicians, 317. While a higher number of internal medicine physicians responded, 84, when compared to family medicine physicians, 60, the response rate for family medicine

was higher. Of the family medicine population, the response rate was near 33%, and nearly 27% for the internal medicine population. The return of such positive responses among the medical specialties should be encouraging to the field of speech-language pathology, as approximately one-third of physicians from each population responded to the survey.

This chapter will compare the results from the current survey with the prior survey by McCauslin et al. (1984). These results will be discussed in detail regarding changes which may or may not have occurred and what this may imply. Questions original to the present study will be discussed as well as those effects on today's clinical practice. Following the discussion of the original survey and the current survey, the information from demographic questions will be discussed, as they don't pertain directly to the speech-language pathologist as they do to the physician. Conclusions, limitations, along with professional and clinical impacts will be discussed at the end of the chapter.

Comparison of Prior Study to Present Study

The original McCauslin et al. (1984) survey was composed of 17 family practice residents who were given 48 hours to complete and return the survey. While there are similarities between the two studies, there are many differences. The present study was composed of 145 family medicine and internal medicine physicians. The current study also received responses by physicians who have been in the workforce for years, as opposed to residents. Instead of two days, the time given to complete and return the present survey was approximately a month. A further difference was that the current survey was optional and anonymous, whereas the previous survey was required by each resident. Table 6 below illustrates these comparisons.

Table 6 -Comparing the McCauslin et al. study (1984) to the current study.

Types of Participants	Family Medicine Residents	Practicing Family Medicine and Internal Medicine Physicians
Number of Participants	17	145
Question Format	Survey	Survey
Question Type	Open-ended	Multiple Choice
Number of Questions	31	20
Response Time	48 Hours	30 Days

There were three particular questions of interest for comparison in the original

study. The first question of interest addressed the types of patients speech-language

pathologists might see. In the original study (McCauslin et al., 1984), residents were

asked a single question regarding patients which may be seen by a speech-language

pathologist. The present study proposes two separate questions to the residents in order

to gather this information. The following questions illustrate the results.

Question #9: What kind of patients do speech pathologists see?
Aphasia   (47%)
Apraxia   (6%)
Stuttering   (29%)
Hearing-impaired   (18%)
Children   (24%)
Degenerative diseases (6%)
        (McCauslin et al., 1984)

The present study had two similar questions, question # 14 and #12 which will be

presented with results. The results will further be discussed following the questions.

Question #14: Circle any of the following patients which may receive services from a
        speech-language pathologist:
Persons with difficulty pronouncing their sounds correctly   (98.62%)
Persons with autism   (68.97%)
Persons who stutter   (95.86%)
Persons wishing to change their dialectal accents   (61.38%)
Persons with chronic hoarseness   (66.21%)

Question #12: Circle the following patient conditions in which you might refer to a
        Speech-Language Pathologist
Aphasia   (86.90%)
Dysphagia (swallowing disorders)   (93.79%)
Dementia   (45.52%)
Dysarthria   (86.90%)
None of the above   (00.69%)

Nearly half of the residents in the original article reported that speech-language pathologists would see a person with some form of aphasia, while the current article presents a nearly 90% response that physicians would refer a patient with aphasia to a speech-language pathologist. The doubling of the original survey's percentage may reflect the physician's recognition of this disorder as it was offered in the multiple-choice, but may also speak to a strengthening of our partnership over the past 25 years.

Originally, only a third of residents reported that a speech-language pathologist would see a person who stutters, however this study, approximately 95% of respondents reported that a person who stutters could be a client of the speech-language pathologist. This percentage has more than tripled over the past two decades suggesting that there has been a greater awareness of stuttering and how to manage it. In comparison to the results from the original study, the current study seems to suggest that physicians are aware and more open to the occupation of the speech-language pathologist in the medical setting.

An additional area of interest in both surveys was discovering how aware physicians are of the speech-language pathologist's educational background. The original study asked in question #7, "How much education must a speech pathologist have?" Just over half of the respondents reported the requirement to be at the college level, while only a third reported graduate level education as the requirement. Interestingly, 12% of respondents from the original study mentioned only a high school diploma was needed for a speech-language pathologist to practice. The present study shows a change in these results. Participants were asked in question #9, "What is the minimum educational degree required to practice as a licensed speech-language pathologist in the state of Alabama?" It was revealed that the 12% of respondents in the

original study who reported the education level to be of a high school degree were not seen in the current study.   Additionally, there was also a shift from just a third of respondents reporting the education level to be a graduate degree in the original study, to the majority of respondents in the present study. The present study results show the majority of physicians reported that speech-language pathologists are required to have a Master's degree to practice in the state of Alabama. The current education requirement of speech-language pathologists is indeed a Master's degree. Following closely behind, approximately 40% responded that only a Bachelor's degree was required. It may be suggested that these responses are a reflection of physicians' awareness of the educational requirements for occupational therapy and physical therapy. In the mid 1980's these professions were required to have a Master's degree, while today, in 2009, they require a Doctorate.   While much of this change may be attributed to the education requirements of occupational therapy and physical therapy, it may be suggested that physicians indeed have become alert to the educational requirements placed upon speech-language pathologists within the state of Alabama.

New Questions and their Clinical Impact

In both surveys physicians were asked to report whether or not their hospital had a speech-language pathologist. The responses to this question may give insight into the physicians' awareness of medical speech-language pathology. The original study results are shown in question #2. The current study proposed the question in a more specific manner, but still gives the similar insight into the physicians' knowledge of speech-language pathologists currently working in their hospital system. Results to the present question are shown below in #6.

#2. Does your hospital have a speech pathologist?
        Yes   (81%)
        No   (19%)

#6. How many Speech-Language Pathologists does your primary hospital employ?
        1-2   (37.50%)
        3-5   (5.56%)
        More than 5   (2.78%)
        I don't know   (40.28%)
        My hospital does not have a Speech-Language Pathologist   (13.89%)

The original study reported that only 19% of residents claimed their hospital did not have a speech-language pathologist. In looking at the question further, it is unclear if the residents were unsure if the hospital employed a speech-language pathologist or if they were certain there were certain that no speech-language pathologists were in fact employed. The present study shows that just below 14% of physicians reported their hospital did not currently employ a speech-language pathologist. However, the current study also revealed that 40% of the respondents reported to be unsure whether or not their hospital employed a speech-language pathologist. It is notable that speech-language pathologists are more commonly employed and present at hospitals today than they were nearly 25 years ago. In comparing these two questions, it is evident that this information is vitally important to the speech-language pathologist and shows a need for increased public relations work.

Concerning the patient conditions which a physician might refer to a speech-language pathologist, as seen in question #12, Dementia was frequently dismissed as a condition which might receive services from a speech-language pathologist. Nearly 45% of physicians included this Dementia in their responses to the question. The original study yielded a 93% positive response rate towards the services of speech-language pathologists in patient care. Of note, the original study simply listed the term "degenerative disease" rather than listing specific diagnoses which may receive services.

In reflection, during the early 1980's, speech-language pathologists on average were not providing services to persons with dementia. The low percentage of results in the present study may suggest that there needs to be an increase in awareness and public education about the speech-language pathologist's services for persons with a degenerative disease. The speech-language pathologist's scope of practice includes helping maintain a person's quality of life. In the case of degenerative diseases, one compensatory strategy for maintaining quality of life includes swallowing exercises to allow the patient to receive nutrition and hydration orally for as long as possible. While it is positive that 45% of physicians responded that they may refer their patients to a speech-language pathologist, further education and awareness should be implemented to increase this percentage to a majority. The following tables reflect recent data from the American Speech Language Hearing Association regarding areas of intervention in which speech-language pathologist work.

Table 7 – Areas of Intervention of Pediatric Patients, 2005 and 2007.

Areas of Intervention for Pediatric Patients, 2005 and 2007.		
Area of Intervention	2005	2007
Articulation/phonology	25%	24%
Cognitive-communication	14%	14%
Fluency	3%	3%
Language	36%	35%
Prevention/wellness	*	1%
Swallowing and feeding	16%	17%
Voice/resonance	3%	3%
Other	3%	3%
*Item not included in survey.		
n = 1,034 (2005); n = 1,189 (2007)		

(Ghazzawi, 2007, p. 9)

Table 8 – Areas of Intervention of Adult Patients, 2005 and 2007.

Areas of Intervention for Adult Patients, 2005 and 2007.		
Area of Intervention	2005	2007
Accent modification/communication effectiveness	*	1%
Aphasia	17%	17%
Cognitive-communication	21%	21%
Motor speech	8%	8%
Prevention	*	1%
Swallowing	45%	46%
Voice/resonance	7%	5%
Other	3%	2%
*Item not included in survey.		
n = 1,374 (2005); n = 1,598 (2007)		

(Ghazzawi, 2007, p. 9)

Demographics

The typical respondent to this survey was a male internal medicine physician having practiced for 16 or more years. Respondents were typically affiliated with at least one hospital. The majority of physicians expressed interest in a continuing education activity to further understanding and knowledge of speech-language pathology as a profession. Furthermore, the majority of respondents viewed speech-language pathology as a valuable team member in the care of their patients.

Family Medicine vs. Internal Medicine

In looking at the results from both medical specialties, direct comparisons will not be made between specific medical specialties. There are some points of interest which will be presented throughout this section of the chapter. Overall survey responses were mostly from the internal medicine group, comprising nearly 58% of the responses. While this level of response is impressive, the sample size should be taken into consideration. When looking at the groups individually, family medicine physicians had a higher

response rate. Of those family medicine physicians who were randomly selected, 33% responded, while only 23% of internal medicine physicians responded.

Overall, 55% of physicians reported referring their patients to a speech-language pathologist on a daily, weekly or monthly basis, whereas only about 45% of physicians reported referring rarely or never. Although the majority seems to refer more often, the results are close in proximity. The results showed that half of the family medicine responded that they refer their patient's to a speech-language pathologist rarely. Just below half of family medicine respondents refer either monthly or more frequently. This suggests that referral rates from family physicians are nearly equally split, with 50% of them referring rarely and 45% referring on either a weekly or monthly basis. However, of those internal medicine physicians who responded, nearly 60% reported monthly or weekly referrals, while just above a third reported referring patients rarely. Internal medicine physicians have a slightly higher referral rate to speech-language pathologists at 60% than family medicine physicians at 45%. The disparity between the two medical specialties may be a result of various influencing factors such as the clientele for each group or the physician's view of the potential effectiveness of speech-language therapy for the client.

Both medical specialties had a highly positive response towards the value of the speech-language pathologist as a team member in the care of the patient. Of the total number of respondents, only three reported not viewing the speech-language pathologist as a valuable team member. Family medicine physicians had a response rate of 97% reporting to view the speech-language pathologist as a valuable team member, while internal medicine physicians had a response rate of 99%. The positive response from

physicians towards the speech-language pathologist is highly encouraging. A positive view of the speech-language pathologist should help build the partnership between physicians and the medical-speech language pathologists on the team. The strong partnership would benefit the patient in the care received from the team.

It is also of importance to determine any similarities or differences between the medical specialties in their view on the speech-language pathologist's recommendation of non-oral feedings. The current study presented question #16 concerning the speech-language pathologist's scope of practice: "Are speech-language pathologists qualified to suggest non-oral feeding?" Overall, 88% of the respondents reported viewing speech-language pathologists as qualified to suggest non-oral feedings. Nearly 93% of family medicine physicians and 84% of internal medicine physicians responded that speech-language pathologists are qualified to make such suggestions. Both medical specialties had a majority response that speech-language pathologists are qualified to recommend non-oral feedings, however the internal medicine respondents seemed to present a more controversial view regarding such recommendations. The positive response to this question may suggest that the medical community is becoming more aware and accepting of the speech-language pathologist's scope of practice with regard to swallowing.

Physicians were presented with a question regarding the place of employment of the speech-language pathologist. Overall, 66% of the respondents acknowledged the speech-language pathologist's possible employment locations to include: private practice, assisted living facilities, hospitals, skilled nursing facilities and university clinics. The response for each medical specialty was similar. According the family medicine physicians, over 60% responded that speech-language pathologist may be employed in

the previously discussed locations, while just below 70% of the internal medicine physicians reported the same locations.   Furthermore, the second most frequent response of 10% included all facilities except assisted living. This high response rate towards the physician's knowledge of the place of employment for speech-language pathology is encouraging. This may show that physicians are aware that speech-language pathologists are employed in a variety of settings, including locations which serve children and adults.

        Physicians were asked if they or their staff would be interested in attending a continuing education course which would provide information about the field of speech-language pathology and the scope of practice of the medical speech-language pathologist. Overall, 60% of respondents reported interest in attending the class. However, there was a striking difference between the medical specialties in their responses. Family medicine physicians had a positive response, with 79% expressing interest in such a course. In contrast, only 48% of internal medicine physicians expressed interest in attending or sending staff to attend such a course. While the response was much higher among family medicine physicians, both responses are positive and should be encouraging to the field of speech-language pathology. It is important that physicians are expressing interest in learning about the field of speech-language pathology. If followed up, these courses may lead to a better understanding of the field of speech-language pathology, as well as building a stronger partnership between the medical speech-language pathology community and the medical community.

Physician's Clinical Experience with the Speech-Language Pathologist

Results were compared to see if there was a higher response from physicians who reported having had direct clinical experience. Direct clinical experience, as previously

stated, includes the physician's direct therapy with the speech-language pathologist

and/or family member which have received speech-language therapy services. Only a

third of the respondents reported having clinical experience, while two thirds reported

having no clinical experience. It seems that clinical experience with speech-language

pathology services did not play a major role in the completion and return of the survey.

Additionally, the following areas were compared with the physicians' clinical experience

to identify if any relationships were present among the results: rates of interaction, view

of the speech-language pathologist as a valuable team member, the speech-language

pathologists' qualifications to suggest non-oral feeding, and the physician's desire to

attending a continuing education activity regarding the field of speech-language

pathology. Generally, there did not seem to be any remarkable differences between

physicians reporting to have had clinical experience with a speech-language pathologist

when compared to those who have not had such clinical experiences. These results may

be encouraging to the speech-language pathologist as it shows he/she is thought of

positively by both groups of physicians.

Years of Practice

The first area of discussion in this section will begin looking at demographics and

the amount of years of practice of the participants. In question #3, the physicians were

asked to report how many years they have been practicing medicine. The majority, 72%,

of respondents fell within the 16-25 years and 26+ years groups. Therefore, when

looking at how the physicians responded to questions in relation to their years of

practicing, the data will be collapsed into how those with more than 16 years versus less

than 16 years. Overall, physicians who responded were reported to have been in practice

for 16 or more years. This overwhelming response in the later years could be due to a variety of factors. Such factors may have included the physicians having already established a practice. Another contributing factor may involve the physicians age. It might be assumed that a more experienced physician would be older, and that his or her children or grandchildren would be away from the home, either in school or working. Therefore, without children at home or extracurricular activities after school for the child, the physician may have a few additional moments to spare at the end of the day towards completing the speech-language pathology survey. A third possible influence is the physician's value of team perspective. Physicians who have been in practice longer may have observed more instances of a speech-language pathologist in the team setting, influencing the view of the value of the speech-language pathologist. Additional factors may include previous or current interactions and experiences with a speech-language pathologist or a desire to assist in graduate level thesis research. As a physician, continuing education is vital to the success and efficacy of practicing. The physician may also have wanted to contribute to the field of speech-language pathology because of a personal or clinical relationship he/she has or has had with a speech-language pathologist. Each of these factors may have contributed to the later year's group yielding a higher response rate when compared to the younger year's group.

The potential influence of years practicing on referral rate was also of interest. There were two views which may be taken when considering years of practice and referral rates. First, it may be assumed that those physicians who are newly practicing may be more likely to refer, as they may be more aware of speech-language pathologists and their scope of practice through recent medical courses or rotations. Second, those

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physicians who have been working longer would be more likely to refer because they have more experience with speech-language pathologists and the patient conditions which are seen by speech-language pathologists. Both assumptions will be considered in these data sets. Of the physicians with greater experience, 63% reported to refer rarely or never, while only 37% reported to refer their patients to a speech-language pathologist on a monthly basis or more. Similarly, of those physicians who have been practicing for a shorter period of time, 66% reported to refer rarely or never, while 34% reported to refer at least monthly. These percentages suggest that referral rate does not seem to be affected much by the number of years practicing.

One might assume that years of practicing might influence the physician's view of the speech-language pathologist as a valuable team member in the patient care. There was an overwhelmingly positive response among both the later years and the early year's physicians. All but three total respondents reported that the speech-language pathologist is a valuable team member. Of those who have been in practice 0-15 years, 95% attributed value to the speech-language pathologist, while 99% of those physicians in practice 16 or more years responded the same. Both groups of physicians responded positively to the value of the speech-language pathologist, further attributing a positive view of the profession.

Furthermore, results were compared to determine if the physician's years of practice might influence his or her knowledge in where speech-language pathologist might be employed. Of the early years group, 0 to 15 years of practice, 31 of the 41 respondents reported the speech-language pathologist working at the following settings: private practice, assisted living, hospitals, skilled nursing facilities and university clinics.

Similarly, 65 of the 103 respondents with 16 or more years of practice reported the same locations. Overall, majority of physicians' expressed knowledge regarding the locations in which speech-language pathologist work. This may imply that physicians have at the very least a basic understanding of populations in which speech-language pathologists may work with and the locations in which the patients are seen.

A point of interest in looking at the physician's years of practice is the effect on interest to gather more awareness and understand of the profession of medical speech-language pathology. Nearly 70% of those in the early years group expressed interest in attending, or allowing their staff to attend, a continuing education course. Just over half of physician in the later years group expressed that same interest. The lower percentage from the later years group may be attributed to a feeling of sufficient knowledge or set patterns of practice. It is still encouraging that over half of both groups responded positively to attending a course to further their knowledge and understanding of the speech-language pathology profession.

Gender

An additional point of interest in the demographics was looking at the survey responses according to gender. Overall, both genders reported viewing the speech-language pathologist as a valuable team member. Reported referrals also seemed somewhat comparable. Males physicians tended to refer more often with 57% referring patients on either a daily, weekly or monthly basis, while only 42% of female physicians reported daily, weekly or monthly referrals. Historically, physicians' occupations have been help predominantly by males, while speech-language pathology positions have been

predominantly held by women. Overall, it seems that both genders have a positive referral rate of their patients to speech-language pathologists.

Results were cross-referenced further to see if there was a possible influence on referral rate by gender. Of the 24 female physicians who responded, 42% reported to refer on a daily, weekly or monthly basis, while 58% refer rarely or never. In comparing this to the 121 male physician who respondent, 58% refer patients to speech-language pathologists on a daily, weekly or monthly basis, while 42% refer rarely or never. Male physicians seem to refer patients more often than female physicians. However, it should be taken into consideration in viewing this data, that the female population was much smaller than the male population.

In regard to the physicians' view of the speech-language pathologist's value as a team member, 96% of females reported viewing speech-language pathologists as a valuable team member in caring for the patient. Similarly, 98% of males viewed speech-language pathologists as a valuable member. The positive view of the speech-language pathologists is encouraging for the partnership between physicians and speech-language pathologist. It is important for each team member to view other team members as valuable to result in the most optimal care for the patient.

In further consideration of the physician's gender in the influence on their awareness of the speech-language pathologist's scope of practice, there was a larger gap in the percentages when addressing the physician's view of the speech-language pathologist's qualification to suggest non-oral feedings. Of the female physicians, nearly 71% responded positively towards the speech-language pathologists qualifications to suggest non-oral feedings. On the other hand, 88% of the male physicians responded

positively. Both groups had a majority report that speech-language pathologists are qualified to suggest non-oral feedings.

However, female physicians responded more positively concerning continuing education. Seventy-five percent of the females expressed interest in attending a continuing education course or activity to increase knowledge and understanding of the speech-language pathology profession. Fifty-five percent of the male physicians responded positively to attending such a course. While a majority of both groups expressed interest in increasing their understanding of speech-language pathologists, female physicians, overall, seem to express more a desire to do so.

Limitations of the Present Study

A limitation which was revealed throughout the process of the study was in the random selection of the subjects. The subject selection list was from the Medical Association of the State of Alabama website, www.masalink.org. As a result of this general listserve, the list which we randomly selected our 500 subjects was a mix of primary care physicians in the specific medical fields of family medicine physicians and internal medicine physicians. It was not the intent of this study to compare one medical specialty with the other, but rather to observe how this combined medical population perceives speech-language pathologists. Therefore, there was not a equal number of physicians in each medical specialty. However, it would be interesting, in the future, to make those comparisons and see if there are difference in perceptions and partnerships between speech-language pathologists and certain medical specialties.

Clinical Implications of the Present Study

The results of this survey have brought about the conclusion that there has been increased awareness and understanding of medical speech-language pathologists among both family medicine physicians and internal medicine physicians. In order to further increase the awareness and understanding of what medical speech-language pathologists do, it would be useful to offer a continuing education course to physicians and their staff. In the survey physicians were presented with this proposition in order to learn how physicians might take advantage of such a course. The physicians were asked if they would be willing to attend, or allow their staff to attend one of these workshops. There was a positive response rate of 61% reporting that they would be interested in such a class. Of the respondents who declined attending such a course, some apologetically commented on the survey that he/she would be too busy to attend. It should be an encouraging fact that a majority of physicians reported to be interested in increasing their knowledge and understanding of medical speech-language pathologists.

Overall, results of the survey were positive. The partnership between physicians and speech-language pathologists in the medical field seems to have improved. Both medical specialties reported viewing speech-language pathologists as a valuable team member and the majority of referral rates were daily, weekly or monthly. It was encouraging to find the referral rates to be in the majority, rather than the minority.

Recommendations for Future Research

There are certain areas in which it would be beneficial to conduct further studies and assessment. It would be beneficial to know more about physicians' knowledge of which patient conditions they would refer to a speech-language pathologist, when, and

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how they come about their decision to refer or not to refer. Of the disorders presented in the survey question, physicians generally responded positively to a speech-language pathologist having a person with dysphagia, dysarthria and aphasia on their caseload. However, the disease in which the minority of physicians' identified that speech-language pathologists work with was dementia. Further investigation should be completed in the role of the speech-language pathologist in regard to the various degenerative diseases. According to Medicare guidelines and health care in general, speech-language pathologists must be an active participant in the care of person's with degenerative disease to help maintain a person's quality of life.

It would be interesting to see how other medical specialties would respond to questions such as the ones presented in this study. Areas of specific interest would include specialties which are closely tied with the profession of speech-language pathology, such as neurology, physical medicine and otolaryngology. Further studies should be conducted so as to view the success of speech-language pathologists among these professions. Also, to assess our current relations and partnerships with such medical specialties so as to determine if further public relations should be completed among the groups.

Since there was such a positive response towards physicians or their staff attending a continuing education course or activity, it would be of interest to have a pilot course conducted to assess its success. This course would not only give an overview of the profession, but also explain in further detail about the speech-language pathologist's education requirements and scope of practice. This brief educational activity would include topics such as specific patient diagnoses which may be served by a speech-

language pathologist as well as types of therapy which might be effective for these patients. Additional emphasis would be placed on bettering patient care as well as the importance of team value and unity. Efforts such as these will help speech-language pathologists maintain a positive relationship among other medical professions and helping to increase partnerships with physicians of all specialties.

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APPENDIX A

Cover Letter will be printed on Auburn University Letterhead

June 08, 2009

Dear Physician,
       The enclosed survey supports my Master's thesis research at Auburn University. As the daughter of a physician, I have had the opportunity to observe the close partnership between my father, an interventional radiologist, and his colleagues. I had assumed, beginning my clinical work as a graduate student, that all partnerships would be as I'd experienced growing up. However, while many partnerships are strong, I have witnessed that not all interactions between professionals is built on such positive rapport. I am in pursuit of improving and strengthening partnerships between speech-language pathologists and physicians in place where needed. For our mutual patients to receive the best care, it is important that the partnership between the speech-language pathologist and the physicians to be as strong as I have observed between my father and his colleagues. Please assist me in bettering the quality of treatment for our patients by completing the attached survey.
       The purpose of this survey is to evaluate the awareness and degree of insight physicians have in regards to the scope of practice, education and place of employment of speech-language pathologists. The results of this study will speak to areas of public relations which may need to be maintained or increased. It may also lead us to see ways in which students, both medical and in speech-language pathology, may be taught more in depth about the scope of practice and interaction with other medical professions.
       This survey is strictly voluntary and no identifying information will be disclosed. If you decide to participate, please return the completed survey in the pre-stamped and pre-addressed envelope by ___ ____, 2009.

Thank you for your time and participation,
Amber Carole Hamilton
hamilac@auburn.edu
Auburn University

APPENDIX B
Speech-Language Pathologist Questionnaire

1. What medical specialty do you practice?
    a. Family Medicine
    b. Internal Medicine
    c. Other
2. Have you or someone in your immediate family received services from a Speech-Language Pathologist?
    a. Yes
    b. No
3. How many years have you been practicing medicine?
    a. 0-5
    b. 6-15
    c. 16-25
    d. 26+
4. Are you affiliated with a hospital?
    a. Yes, one hospital
    b. Yes, more than one hospital
    c. No
5. Approximately how many beds does your primary hospital have?
    a. 1-150
    b. 151-300
    c. 301-450
    d. 451+
6. How many Speech-Language Pathologists does your primary hospital employ?
    a. 1-2
    b. 3-5
    c. More than 5
    d. I don't know
    e. My hospital does not have a Speech-Language Pathologist
7. How often do you make referrals to a Speech-Language Pathologist?
    a. Daily
    b. Weekly
    c. Monthly
    d. Rarely
    e. Never

8. How often do you interact with a Speech-Language Pathologist?
   a. Daily
   b. Weekly
   c. Monthly
   d. Rarely
   e. Never
9. What is the minimum educational degree required to practice as a licensed Speech-Language Pathologist in Alabama?
   a. High School Diploma
   b. Associate Degree
   c. Bachelor's Degree
   d. Master's Degree
   e. Doctorate Degree
10. Approximately how many Speech-Language Pathologists are certified in the United States?
    a. 25,000
    b. 100,000
    c. 300,000
11. Circle any of the following locations in which a Speech-Language Pathologist might be employed:
    a. Private Practice
    b. Assisted Living
    c. Hospital
    d. Skilled Nursing Facility
    e. University Clinics
12. Circle the following patient conditions in which you might refer to a Speech-Language Pathologist?
    a. aphasia
    b. dysphagia (swallowing disorders)
    c. dementia
    d. dysarthria
    e. none of the above
13. If communication deficits are present following a stroke or traumatic brain injury, when is the best time to refer to a Speech-Language Pathologist?
    a. Within the first 2 weeks
    b. After 1 month
    c. After 3 months
    d. After 6 months
14. Circle any of the following patients which may receive services from a Speech-Language Pathologist:
    a. Persons with difficulty pronouncing their sounds correctly
    b. Persons with autism
    c. Persons who stutter
    d. Persons wishing to change their dialectal accents
    e. Persons with chronic hoarseness

15. Would you refer a patient who is unable to verbally communicate to a Speech-Language Pathologist?
    a.   Yes
    b.   No
16. Are Speech-Language Pathologists qualified to suggest non-oral feedings?
    a.   Yes
    b.   No
17. Are separate certifications required for Speech-Language Pathologists to work with children versus adults?
    a.   Yes
    b.   No
18. Do you view the Speech-Language Pathologist as a valuable team member in the care of the patient?
    a.   Yes
    b.   No
19. If a continuing education activity was available in your community about Speech-Language Pathology services, would you or your staff be interested in participating?
    a.   Yes
    b.   No
20. What is your gender?
    a.   Female
    b.   Male

APPENDIX C

INFORMATION LETTER
For a Research Study entitled
"Partnering with Physicians: How are Speech-Language Pathologists Perceived?"

You are invited to participate in a research study to evaluate the awareness and degree of insight physicians have in regard to the scope of practice, education and place of employment of speech-language pathologists. The study is being conducted by Amber Hamilton, B.S, Graduate Student, under the direction of Nancy Haak, Ph.D., Associate Professor of Medical Speech Language Pathology, in the Auburn University Department of Communication Disorders. You were selected as a possible participant because you are a general internal medicine or family practice physician.

What will be involved if you participate? Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete and return the survey. Your total time commitment will be approximately 3 to 5 minutes. There are no associated risks with this study.

Are there any risks or discomforts? If you participate in this study, you can expect to contribute to the knowledge about the scope of practice, education and place of employment of speech-language pathologists.

Are there any benefits to yourself or others? You may benefit from a heightened awareness of the important role of referring patients which may benefit from speech-language therapy services. We/I cannot promise you that you will receive any or all of the benefits described. Benefits to others may include applied research that may follow presentation and/or publication of the results of this study.

Are there any costs? If you decide to participate, no costs will be applied to you. A pre-addressed and pre-stamped envelope is enclosed for easy return.

If you change your mind about participating, you can simply disregard this survey. Once you've submitted anonymous data, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate will not jeopardize your future relations with Auburn University, the Department of Communication Disorders.

Any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provide by not requesting any identifying information from you. Information collected through your participation may be used to fulfill an educational requirement, presented at a national conference, and/or published in a professional journal.

If you have any questions about this study, please contact Amber Hamilton at hamilac@auburn.edu or Nancy Haak at haaknan@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334) 844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFOMRATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE COMPLETE THE ATTACHED SURVEY AND RETURN IT IN THE ENVELOPE PROVIDED. THIS LETTER IS YOUR COPY TO KEEP.

_____   _____
Investigator   Date

"The Auburn University Institutional Review Board has approved this document for use from May 5, 2009 to May 4, 2010. Protocol #09-130 EX 0905."