

CHAPTER III

RESEARCH METHODS AND PROCEDURES

Both speech-language pathologists and laryngectomees are members most closely associated with the artificial larynx. Using a survey study design, these groups were queried to determine their experiences with the reliability of artificial larynx devices. Other perspectives of the artificial larynx, including the practices of speech therapists, important features and characteristics, and why devices fail were surveyed and analyzed.

In an attempt to offer new information on the topic, the following research questions were asked:

1. What are the practices of speech-language pathologists regarding advising laryngectomees in the use of artificial larynx devices?
2. What are perceived causes of artificial larynx problems among speech-language pathologists and laryngectomees?
3. What features and characteristics are important to speech-language pathologists and laryngectomees?
4. Are there significant differences in perceived importance of features and characteristics between speech-language pathologists and laryngectomees?

5. What artificial larynx devices are most highly recommended by speech-language pathologists and used by laryngectomees?
6. How satisfied are speech-language pathologists with the artificial larynx devices they recommend, and how satisfied are laryngectomees with the artificial larynx devices they use?
7. What is the perceived reliability of the artificial larynx devices recommended most by speech-language pathologists and used most by laryngectomees, and are there any significant differences between these groups?

Using a survey design to query speech therapists and laryngectomees, an attempt to answer the above research questions was made. Survey questions presented to the two groups had counterparts, or associated questions, for comparison purposes. Statistical analysis was used to determine correlations of responses between these groups. The survey design is the best way to obtain original data. Babbie (1995) suggests that the survey design is also an excellent model for measuring attitudes and experiences of a given population. The survey instrument is particularly useful in describing the characteristics of population. Both speech-language pathologists and laryngectomee are the groups most closely associated to the artificial larynx. Additionally, a number of artificial larynx devices are either recommended or used by these groups. The survey instrument is the most appropriate tool to determine the attitudes and experiences of these groups as they pertain to the various artificial larynx devices.

Quantitative Research Methods

Research for this study employed the survey model to collect and analyze data. This method of the quantitative paradigm was selected because of: 1) regional constraints (Orlich, Clark, Fagan & Rust, 1981), 2) the survey model's ability to obtain original data for describing a population and, 3) the survey's ability to measure attitudes and opinions (Babbie, 1995).

Survey research has several advantages and some disadvantages. In their treatise on the topic, Orlich et al. (1981) show that survey research has the following advantages:

1. Several individuals can be contacted at the same time.
2. A questionnaire is less expensive than the interview technique.
3. Each respondent receives identical questions.
4. A written questionnaire provides a vehicle for expression without fear of embarrassment to the respondent.
5. Responses can be easily tabulated.
6. People can answer at their own convenience.
7. There is no need to train interviewers.
8. People in remote or distant areas can be reached.

Additionally, Babbie (1995) explains that surveys can describe the characteristics of large populations and that they are a reliable research tool. Since surveys contain the same questions issued to a given population they are considered standardized.

Orlich et al., (1981), state that surveys have disadvantages. These include:

1. The investigator is prevented from learning the respondent=s motivation for answering questions.
2. Respondents may be limited from professing free expression of opinions.
3. The collection of data from individuals who cannot read, write or see is prevented.
4. The return of all questionnaires is difficult to achieve.
5. Complex designs cause poor responses or none.
6. The investigator is prevented from learning what causes a problem.
7. The name and current addresses of the target population are often not available.
8. A question may have different meanings to different people.
9. There is no assurance that the respondent actually completes the instrument.
10. Selections of the sample, per se, may cause biased results.
11. The questionnaire may ask for long outdated information.
12. Respondents may not complete the entire instrument.

In his discussion of survey weaknesses, Babbie (1995) indicates that Astandardized questionnaire items often represent the least common denominator in assessing people=s attitudes, orientations, circumstances, and experiences≡ (p.273). Additionally, questionnaires cannot measure social action or the context of social life. Finally, when one compares survey research to field study, survey study is weaker in terms of its validity. Because the survey is an artificial tool it cannot be completely valid (Babbie,

1995).

Survey Instrument

In line with Babbie (1995), a process was undergone of consulting the literature in order to design two survey instruments (Appendix A and B) to query laryngectomees and speech pathologists who are the people most closely associated with artificial larynx devices. Survey design involved determining uniqueness, indicators, and sample items associated with the sampling of artificial larynx devices. An expert panel was consulted regarding the review of the instruments and revisions were made in accord with the experts' suggestions. The expert panel consisted of four certified speech-language pathologists experienced in the area of artificial larynx devices and alaryngeal speech rehabilitation.

Because speech-language pathologists and laryngectomees form two heterogenous groups, two separate instruments were developed. Since laryngectomees are the actual users of artificial larynx devices, they have information to offer regarding their personal, day-to-day experiences using the devices. Speech-language pathologists work with laryngectomees and recommend equipment which can yield valuable information. Both survey instruments were accompanied by a cover letter (Appendix C and D) that provided directions and explained the choice to participate. This same letter explained anonymity and offered participants the results of the study if they were interested. The cover letter issued to laryngectomees was read aloud by the coordinator. Each of the two instruments were pilot tested prior to distribution, and revisions were made accordingly.

The survey instrument designed for laryngectomees contained a total of 25 questions; 24 multiple response questions, and one open-ended question. Four questions used a Likert scale where respondents were asked to rate individual variables. The first six questions were biographical in nature. Questions 7 through 10 served to identify important features and characteristics of artificial larynx devices. Query question 11 identified the perceived causes of artificial larynx failure. Question 12 inquired about negative changes to the device that have occurred over time. Question 13 identified the amount of talking placed upon the device. Questions 14 and 15 asked how the user was introduced to the device and when it was obtained in relationship to their surgery. Questions 16 and 17 asked about the satisfaction of artificial larynx devices and the batteries that operate them. Questions 18 and 19 determined the specific device currently used and its age. Questions 20 and 21 identified the perceived reliability of the device and when, if applicable, it started to breakdown. Question 22 queried how the laryngectomee first heard about the device that he or she currently uses. Question 23 asked for the respondent's feelings about how knowledgeable they are about artificial larynx devices. Question 24 asked for the respondent's feelings to the statement, "Artificial larynx devices should be a last resort when other speech methods have failed." Finally, in question 25, the respondent was given the opportunity to provide any additional information associated with artificial larynx devices.

Similar in format, the instrument designed for speech-language pathologists contained a total of 25 questions; 24 multiple response, and one open response. Four questions used a Likert scale where a ranked continuum of response was needed.

Questions one through six were biographical. Questions 7 through 10 served to identify important features and characteristics of artificial larynx devices. Query question 11 requested the perceived causes of artificial larynx failure. Question 12 inquires about negative changes to the device that may have occurred over time. Question 13 identified the amount of talking placed upon the device. Questions 14 and 15 queried how and when the therapist introduced to the device to the patient. Questions 16 and 17 queried the satisfaction of artificial larynx devices and the batteries that operate them. Questions 18 and 19 determined the specific device most currently recommended and the average lifetime that the device can be expected to last. Questions 20 and 21 identified the perceived reliability of the recommended device and at what age, if applicable, it started to breakdown. Question 22 queried how the therapist first heard about the device that he or she currently uses. Question 23 asked for the respondent's feelings about how knowledgeable they are about artificial larynx devices. Question 24 asked for the respondent's feelings to the statement, "Artificial larynx devices should be a last resort when other speech methods have failed." Finally, in question 25, the therapist was given the opportunity to provide any additional information associated with artificial larynx devices.

Sampling And Data Collection

One hundred sixty laryngectomees and 228 speech-language pathologists were used in the survey study. Laryngectomees for this study were identified using the 2002 Directory of Laryngectomee Clubs (IAL, 2002). According to the most recent listing of laryngectomee clubs published by the International Association of Laryngectomees

(2002), 174 clubs exist in the United States. Clubs identified in the directory were selected using systematic sampling with a random start (Babbie, 1995). Systematic sampling is slightly more accurate than simple random sampling and is especially useful when a list is available. Club selection occurred by randomly selecting an individual club in the directory. From this point of selection, every fourth club on the list was identified. Using this strategy, approximately 40 clubs randomly emerged. Given the time and financial resources allotted for the study, this number of identified clubs was thought to be a reasonable amount adequate to capture the responses of artificial larynx users. Clubs throughout the country had an equal chance of being selected and if an average club yielded 5 respondents, the total laryngectomee sample was estimated at 200. Importantly, there was no way to predict the total number of clubs or their respondents until the study was underway.

Information in the IAL directory is limited and offers only the name of the club, its address and phone number, the club contact person, and the meeting time and place. Because all the elements or individuals in a given club cannot be identified, cluster sampling was then used (Babbie, 1995). Following the systematic selection of clubs, cluster sampling occurred by contacting the club contact person. These individuals were questioned regarding their interest in the study and whether or not they would volunteer to coordinate the distribution, reading of the directions, and collection of the survey instruments to their membership who use artificial larynx devices. If a club could not be contacted or could not participate, the next club on the list was selected. By using this strategy, one contact person at each club identified artificial larynx users and facilitated the administration of the questionnaire during the club's monthly meeting. The contact

person was responsible for the collection of the surveys and their return to the investigator. Each contact person was asked for the approximate number of artificial larynx users that attend meetings and also the date the meeting was held.

The number of artificial larynx users that were indicated by the contact persons corresponded with the number of surveys that were sent to the clubs. A large, self addressed, stamped envelope was included with the questionnaires to facilitate the returns. For survey instruments that were not returned, the researcher attempted to contact the laryngectomee coordinator by telephone as a reminder. Reminder telephone contacts are considered to be a useful technique to increase response rate (DSS, 2001). As a token of appreciation and a strategy to maximize the return rate, the contact person was informed that a donation on their club's behalf would to be made to the International Association of Laryngectomees upon receipt of the surveys. According to DSS Research (2001), the use of charitable contributions can be used to improve response rates.

Speech-language pathologists identified in the American Speech and Hearing Association's Special Interest Voice Group Directory (2002) were queried in this study. This group of professionals have expressed special interest in voice disorders to the American Speech and Hearing Association and have paid additional dues to be members and receive periodicals. Because these certified therapists have a high, condensed likelihood of working with voice patients and laryngectomees, they were selected as participants. The total size of this group is 544 members (ASHA, 2002). Postcards and surveys were sent to the entire mailing list. To determine the finite number of professionals who worked with artificial larynx devices, respondents were asked, as a prerequisite, to check an option on the postcard that queried whether or not they were

qualified or willing to complete the questionnaire. (Appendix E) Qualification involved whether or not the professional worked with artificial larynx devices and laryngectomees. The total number of postcards that were returned announced the sample size. If the respondent was not willing to complete the survey, the postcard also queried the reason. Babbie (1995) contends that a return rate of 50 percent is satisfactory for analysis and reporting; 60 percent is good; and 70 percent is very good. Importantly, it was thought that an unknown portion of recipients would not meet the qualification necessary to complete the instrument and that some would not respond. By sending postcards and questionnaires to the entire group, there was a higher likelihood that a usable response rate could be obtained.

Members of this group were located throughout the United States and pressure sensitive address labels from the American Speech and Hearing Association were purchased and used. Each survey was issued a 3 digit code before sending to identify surveys as they returned. Respondents were given a self addressed, stamped envelope, and 12 days to complete the instrument. As a token of appreciation and a strategy to increase the return rate, a crisp dollar bill was included with each survey instrument. The use of small monetary rewards have been reported by Brennan (1992) and Babbie (1995) as a tool to increase response rate.

Data Analysis

Raw data obtained from the survey instruments was coded and entered in the Statistical Package for the Social Studies (SPSS, 1999) for analysis. Analysis included the computation of descriptive and inferential statistics. The research questions

addressed and the statistical procedure associated with each are noted below. The target survey questions used to answer the research questions are found in Appendix F.

1. What are the practices of speech-language pathologists regarding advising laryngectomees in the use of artificial larynx devices? The statistical analysis was descriptive.
2. What are perceived causes of artificial larynx problems among speech-language pathologists and laryngectomees? The statistical analysis was descriptive.
3. What features and characteristics are important to speech-language pathologists and laryngectomees? The statistical analysis was descriptive.
4. Are there significant differences in perceived importance of features and characteristics between speech-language pathologists and laryngectomees? The statistical analysis used was Chi Square.
5. What artificial larynx devices are most highly recommended by speech-language pathologists and used by laryngectomees? The statistical analysis was descriptive.
6. How satisfied are speech-language pathologists with the artificial larynx devices they recommend, and how satisfied are laryngectomees with the artificial larynx devices they use? The statistical analysis was descriptive.

7. What is the perceived reliability of the artificial larynx devices recommended most by speech-language pathologists and used most by laryngectomees, and are there significant differences between these groups? The statistical analysis was descriptive and Chi Square.

Limitations Of The Study

Prior to the investigation, four limitations were identified that could potentially affect the research design. First, the respondents and the devices they use may not reflect enough of one or more devices to be considered representative. For example, the Servox Inton may largely overshadow other devices that have not had as much longevity in the market place. Small cell sizes may affect statistical analysis and interpretation. Until the research was actually conducted, however, there was no way to determine the quantities of devices in use.

Second, there may be an excessively low response rate which limits the amount of information gathered. Babbie (1995) indicates that a response rate of at least 50 percent is adequate; a response rate of 60 percent is good; and a response rate of 70 percent is very good. Babbie states, however, that these are only rough guidelines and that a demonstrated lack of response bias is more important than a high return rate.

Third, the survey study may not cover the in-depth feelings or meanings that a person associates with artificial larynx devices. Further along these lines, individuals who are reclusive or those who do not attend club meetings may not have the opportunity or desire to respond thus skewing the results. Finally, even though survey instruments

are created in hopes of revealing true and honest responses, respondents may answer questions for other motives unknown to the researcher (Orlich et al. 1981). Likewise, those who did not respond to the instrument may have different perceptions and reasons for not responding. To a certain degree, reflections of these limitations were observed as discussed in Chapters 4 and 5.

Ethical Considerations

There are several ethical issues that surround this study. In an effort to avert them, some basic policies were followed. First, information regarding the participants were confidential and anonymous. Even though the survey instrument that was used for the therapists contained a three digit code, the names associated with these therapists were for follow up purposes only. Second, each participant was given the choice to participate in or reject the study. This point was addressed in the cover letter that accompanied each instrument. Third, respondents were reminded that there is no right or wrong answers in association with the survey instruments. Since the instruments are not tests, respondents were treated respectfully and told so. Fourth, the survey instrument may have identified a patient who was suffering or in need of help. For example, it was possible that a patient may request assistance from the researcher. In this case, the researcher was prepared to professionally refer or personally assist the individual in need. Finally, the sharing and dissemination of information was available to everyone who could benefit from it. Participants were given the option of obtaining the results of this study by accessing a website by a certain date announced in the cover letter.

