Gender Difference Considerations for Individuals With Laryngectomies

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Historically, a large percentage of the population with laryngectomies has been male (American Cancer Society, 2001; U.S. Department of Health and Human Services [USDHHS], 2001). However, specialists working in head and neck cancer rehabilitation settings have observed firsthand an increase in the number of laryngectomized females (Brown & Doyle, 1999; USDHHS, 2001). Between the years 1970 and 1993, there was an 11% decrease in the incidence of laryngeal cancer in males; however, there was a 67% increase in the incidence of laryngeal cancer in females. As a result of these changes, the ratio of males to females with laryngeal cancer has narrowed from 10:1 to 5:1 (USDHHS, 2001).

Concurrently, technological advances in medicine, electronics, and prosthetics have dramatically expanded the opportunities for survivors of laryngeal cancer to experience positive postoperative outcomes. The survival rate among laryngeal cancer patients is good; an estimated 70% of these individuals live 5 or more years post-diagnosis (Austin & Reynolds, 1996). These males and females and their families now face adjustment to the physical changes and accompanying alterations in their lifestyle resulting from the surgery. Cancer rehabilitation specialists are exploring the physical, social, emotional, and functional factors that shape the patient’s perception of their quality of life (QOL), influence recovery, and provide valuable information about patient outcome (Blood, Raimondi, Dineen, Kauffman, & Stagaard, 1994; Cella, 1994; Gates, Ryan, Cantu, & Hearne, 1982; Mathieson, Stam, & Scott, 1990; Mohide, Archibald, Tew, Young, & Haines, 1992).

Given the increasing number of females diagnosed with laryngeal cancer, there is a need to investigate not only how the disease, treatment, and rehabilitation efforts impact the patient in general, but whether there are gender difference considerations that necessitate modification of certain clinical strategies.

Almost 40 years ago, Gardner (1966) was the first researcher to address the woman’s perspective following laryngectomy. Since then, there have been few investigations...
that reported separate data for females regarding lifestyle changes, informational needs, and emotional support systems during rehabilitation. In these studies, the females tended to fall into the younger age group at the time of surgery (Bagshaw, 1967; Gardner, 1966; Wallen & Webb, 1975), and a higher percentage underwent more involved surgical procedures than did the males (Bagshaw, 1967). Almost all researchers reported unfavorable reactions by the females to the stoma (Bagshaw, 1967; Gardner, 1966; Salva & Kallail, 1989), feelings of unattractiveness due to postsurgical scarring (Bagshaw, 1967; Gardner, 1966; Salva & Kallail, 1989), and self-consciousness about the pitch and quality of the esophageal voice (Bagshaw, 1967; Salva & Kallail, 1989; Wallen & Webb, 1975). Females valued the support of their husbands, relatives, and friends (Gardner, 1966; Salva & Kallail, 1989). Significantly fewer females than males reported that their surgeon provided helpful information about the surgery and its consequences (Salva & Kallail, 1989). The majority of the females described pre- and postoperative fear and anxiety (Gardner, 1966; Salva & Kallail, 1989; Wallen & Webb, 1975). Alaryngeal speech success appeared interrelated with a positive attitude, the retention of friends, and the ability to return to work (Gardner, 1966). Males were more likely than females to engage in group therapy or attend Lost Chord Club meetings (Wallen & Webb, 1975).

An increasing number of females with laryngectomies are in need of rehabilitation services following a laryngectomy. To date, there have been relatively few comparative studies of the background characteristics, tobacco and alcohol use, treatment variables, physical conditions, communication factors, and sources of information and support for males and females following laryngectomy. The purpose of this study was to explore the question, “Are there differences in the rehabilitative needs of males and females with laryngectomies?”

**METHOD**

A questionnaire was developed to obtain demographic information and to sample operative, physical, and communication factors as well as perceived sources of information and support that have the potential to influence alaryngeal speech rehabilitation. Background characteristics of the respondents (i.e., age, ethnicity, marital status, employment status, income, and education) were sampled. In addition, respondents were asked to identify their tobacco and alcohol use, treatments, physical complaints, and mode of communication, as well as individuals who had provided them with information and support.

### The Questionnaire

The contents of the questionnaire were based on a review of the literature relating to the typical experiences of head and neck cancer patients and the factors that are considered important to alaryngeal speech rehabilitation. Most questions used a close-ended response format, with opportunities to specify “other” responses, as well as some open-ended questions. The questions were reviewed by a pilot group of laryngectomized individuals in the alaryngeal speech clinic at San Francisco State University. Following this review, ambiguous questions were reworded and additional answer options were inserted.

No scoring of the questionnaire responses was necessary. Open-ended responses were entered in full into a database. Answers to close-ended questions were coded numerically and entered to permit the analysis of correlations.

### Procedure

The questionnaire was mailed to 520 individuals (260 males and 260 females) who were randomly selected from the International Association of Laryngectomees (IAL) mailing list. Altogether, 361 questionnaires were returned, representing a 70% response rate. For various reasons, 122 of the returned questionnaires were rejected (i.e., received by non-laryngectomized individuals, undeliverable, addressee deceased, individuals declined or were unable to complete the questionnaire). As a result, 239 of the returned questionnaires could be used in the study.

### RESULTS

#### Background Characteristics

**Gender and age.** The gender of the respondents was controlled for during sampling: The questionnaires were mailed to an equal number of males and females. Of the 239 questionnaires used in the study, 110 (46%) were returned by females and 129 (54%) were returned by males (Table 1). Most of the females (63%) and less than half of the males (44%) were younger than 70 years at the time of their responses to the questionnaire (Table 1). An equal percentage of males and females had undergone total laryngectomy within the past 1–5 years (40%) and within the past 6–10 years (29%). The majority of the females were younger than the males at the time of surgery.

**Ethnicity.** The majority of the respondents were Caucasian (93%), regardless of gender. The remaining 7% of the individuals identified themselves as African American, American Indian/Alaskan native, Asian/Pacific Islander, or multi-ethnic.

<table>
<thead>
<tr>
<th>Age range</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;49</td>
<td>4 (3%)</td>
<td>4 (4%)</td>
</tr>
<tr>
<td>50–69</td>
<td>53 (41%)</td>
<td>65 (59%)</td>
</tr>
<tr>
<td>70–89</td>
<td>70 (54%)</td>
<td>41 (37%)</td>
</tr>
<tr>
<td>90+</td>
<td>2 (2%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Total</td>
<td>129</td>
<td>110</td>
</tr>
</tbody>
</table>

Table 1. Age and gender of the respondents.
Marital status. The majority of the respondents (73% of the males; 53% of the females) were married or were living with a partner at the time of the survey. More females (47%) than males (27%) were without a partner, being single, widowed, or divorced. Respondents were not asked their marital status prior to the surgery, so no conclusions can be drawn as to gender differences and marital status following a laryngectomy.

Employment status and annual income. Almost three-fourths of the males and half of the females were retired. As a consequence, more females (43%) than males (26%) were working full time, part time, or were on disability. The males appeared more financially secure than did the females; one-fifth of the males reported an annual income of $45,000 or higher compared to only 5% of the females. In contrast, 59% of the females and only 27% of the males reported a current annual income of less than $15,000.

Education. Ninety-three percent of the females and 80% of the males finished high school. Of those high school graduates, 93% of the females and 59% of the males went on to complete college-level courses or earn a degree. Of note is the fact that 19% of the male respondents (compared to only 7% of the females) did not finish high school.

Pre- and postoperative tobacco and alcohol use. Males and females shared similar patterns of pre- and postoperative tobacco and alcohol use. Prior to the diagnosis of cancer, 85% of the males and 74% of the females had smoked for periods ranging from 21 to more than 41 years. As shown in Table 2, tobacco use dropped dramatically following laryngectomy; 86% of the males and 90% of the females reported that they no longer smoked. Alcohol use decreased among individuals postoperatively as well. The percentage of males who drank two or more glasses of alcohol per day decreased from 36% to 14%; among the females, the percentage of drinking two or more glasses of alcohol per day decreased from 18% to less than 8%. Approximately 5% of both males and females reported no history of smoking; 12% of the males and 13% of the females denied use of any alcohol prior to surgery.

Treatment Variables

Type and extent of surgery. Although the majority of the respondents had undergone a total laryngectomy (91% of the males; 98% of the females), more females (31%) than males (15%) had also received a radical neck dissection. Eight percent of the females and only 2% of the males reported a recurrence of cancer.

Radiation and/or chemotherapy. Treatment decisions regarding radiation and chemotherapy appeared equal regardless of gender. Most individuals (70% of both males and females) had received radiation therapy; only a small percentage of individuals (9% male, 8% female) had been treated with chemotherapy.

Therapy services. Information was requested regarding the types of rehabilitative services experienced postoperatively. Eighty-three percent of the males and 87% of the females received speech therapy. More than 90% of each group said that they had received individual speech therapy; 14% of both males and females indicated that they engaged in group speech therapy. For the majority of these individuals, the length of speech therapy services lasted less than 3 months (60% for males, 51% for females). Twenty-two percent of the males and 26% of the females received therapy from 3 to 6 months. Less than 7% of the males and females received therapy longer than 1 year.

When asked if they had received other rehabilitative services, a greater percentage of the females (18%) than the males (10%) indicated that they had received physical therapy. Roughly equal percentages of the males and females received counseling (6% male, 5% female), psychotherapy (2%), and occupational therapy (1% male, 2% female).

Postoperative physical conditions. When asked the question, “Which, if any, of the following conditions have you experienced postoperatively?”, the respondents selected multiple physical conditions (Table 3). The conditions cited most frequently by both the males and the females were increased mucus and difficulty swallowing solids. Also ranked in the top 10 by frequency were shortness of breath, fatigue, gas/bloating/indigestion, shoulder pain, difficulty sleeping, bleeding from the stoma, lack of saliva, loss of teeth, and loss of appetite. Females tended to identify more physical complaints (mean number of complaints = 5.8) than did the males (mean number of complaints = 4). More females than males reported conditions of constipation,

<table>
<thead>
<tr>
<th>Table 2. Preoperative and current tobacco and alcohol use.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use</strong></td>
</tr>
<tr>
<td>Tobacco use preoperatively</td>
</tr>
<tr>
<td>Never smoked</td>
</tr>
<tr>
<td>smoked 1–10 years</td>
</tr>
<tr>
<td>smoked 11–20 years</td>
</tr>
<tr>
<td>smoked 21–30 years</td>
</tr>
<tr>
<td>smoked 31–40 years</td>
</tr>
<tr>
<td>smoked 41+ years</td>
</tr>
<tr>
<td>No response</td>
</tr>
<tr>
<td>Current tobacco use</td>
</tr>
<tr>
<td>Do not smoke</td>
</tr>
<tr>
<td>smoke less than 1 pack per day</td>
</tr>
<tr>
<td>smoke 1–2 packs per day</td>
</tr>
<tr>
<td>smoke 3+ packs per day</td>
</tr>
<tr>
<td>No response</td>
</tr>
<tr>
<td>Alcohol use preoperatively</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>occasional</td>
</tr>
<tr>
<td>less than 1 glass/day</td>
</tr>
<tr>
<td>1–2 glasses/day</td>
</tr>
<tr>
<td>2–3 glasses/day</td>
</tr>
<tr>
<td>3+ glasses/day</td>
</tr>
<tr>
<td>No response</td>
</tr>
<tr>
<td>Current alcohol use</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>occasional</td>
</tr>
<tr>
<td>less than 1 glass/day</td>
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<tr>
<td>1–2 glasses/day</td>
</tr>
<tr>
<td>2–3 glasses/day</td>
</tr>
<tr>
<td>3+ glasses/day</td>
</tr>
<tr>
<td>No response</td>
</tr>
</tbody>
</table>
fistula, bleeding from the stoma, neck and throat pain, and shoulder pain.

Postoperative Communication Factors

**Frequency of communication with other people.** When queried about the frequency of their communication postoperatively, the majority of the respondents indicated that they communicated several to many times per day (96% of the males; 92% of the females).

**Primary method of communication.** The majority of the respondents indicated that they used two, even three, methods of communication. When asked about their primary method of communication, most of the males and females indicated that they used the artificial larynx (54% of the males; 56% of the females). Esophageal speech was the primary method of communication for 23% of the males and 18% of the females. Only 16% of the males and 17% of the females indicated that tracheoesophageal speech was their primary method. Less than 10% of the individuals employed writing, gestures, or other means as their primary means of communication. Eighty-nine percent of these people used their primary method for 75% or more of their communication needs.

Both groups rated themselves as “almost always” to “always” successful in their ability to communicate with familiar adults using their primary method of alaryngeal speech 95% of the time. The perception of almost always to always successful communication by both groups dropped slightly (79% male, 77% female) when speaking to unfamiliar adults.

As a means of learning their primary method of communication, the respondents checked multiple sources. Regardless of gender, most of the individuals learned their primary method of communication from a speech-language pathologist’s instructions (69% for both males and females) and/or self-instruction or trial and error (54% males, 45% females). Less than 20% of them relied on another alaryngeal speaker’s instructions (18% males, 15% females) or printed instructions such as a pamphlet or book (16% for both males and females).

**Sources of Pre- and Postoperative Information and Support**

**Information sources.** The respondents were asked to identify those persons who they felt provided important information pre- and postoperatively about laryngectomy-related issues. The majority of the males (62%) and females (56%) selected the physician or surgeon as key providers of preoperative information. The physician and surgeon are logical sources of information regarding diagnosis, prognosis for recovery, and recommendations for treatment. Other sources of preoperative information included the speech-language pathologist, alaryngeal speaker, spouse, significant other, and close relative.

Both groups attributed important postoperative information regarding their condition to the speech-language pathologist 64% of the time. At this stage in rehabilitation, the speech-language pathologist and client are engaged in the identification, selection, and teaching of the primary speech method. The physician or surgeon was selected by 53% of the males and 41% of the females. By their responses, the females indicated that they were less likely than the males to have obtained important information postoperatively from their physician or surgeon. Other alaryngeal speakers were identified as informative resources 29% of the time by the males and 37% of the time by the females. Fourth in frequency of selection were the spouse, significant other, and close relatives by the males (26%), and Lost Chord Club meetings by the females (25%). Other informational sources cited included IAL meetings, the American Cancer Society, nurses, social workers, radiologists, and non-laryngectomized friends.

**Supportive sources.** Next, the respondents were asked to identify people and activities that were most supportive in helping them adjust to life after surgery. Seventy-one percent of the males and 68% of the females ranked the spouse, significant other, and close relatives as the most supportive individuals. The females were more likely to depend on non-laryngectomized friends for their adjustment to life after surgery (50% of the females vs. 29% of the males). Both groups selected the speech-language pathologist as a supportive resource 50% of the time. Other alaryngeal speakers and the physician or surgeon tied for fourth place among the males (26% each). Thirty-one percent of the females ranked the physician or surgeon as important to their postsurgical adjustment.

Family ties were important to these respondents: Fifty-one percent of the females and 34% of the males indicated that family gatherings were beneficial to their postsurgical adjustment. Females valued reading (41%), church services (30%), and non-laryngectomized social groups (22%). Males preferred Lost Chord Club meetings (24%), their work setting (22%), and reading (20%).

### Table 3. Postoperative physical complaints.

<table>
<thead>
<tr>
<th>Complaint</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding from stoma</td>
<td>16 (12%)</td>
<td>34 (31%)</td>
</tr>
<tr>
<td>Constipation</td>
<td>21 (16%)</td>
<td>30 (27%)</td>
</tr>
<tr>
<td>Difficulty concentrating</td>
<td>8 (6%)</td>
<td>12 (11%)</td>
</tr>
<tr>
<td>Difficulty sleeping</td>
<td>38 (29%)</td>
<td>34 (31%)</td>
</tr>
<tr>
<td>Difficulty staying awake</td>
<td>3 (2%)</td>
<td>7 (6%)</td>
</tr>
<tr>
<td>Difficulty swallowing liquids</td>
<td>15 (12%)</td>
<td>21 (19%)</td>
</tr>
<tr>
<td>Difficulty swallowing solids</td>
<td>55 (43%)</td>
<td>52 (47%)</td>
</tr>
<tr>
<td>Fatigue</td>
<td>44 (34%)</td>
<td>46 (42%)</td>
</tr>
<tr>
<td>Fistula</td>
<td>2 (2%)</td>
<td>10 (9%)</td>
</tr>
<tr>
<td>Gas/bloating/indigestion</td>
<td>40 (31%)</td>
<td>43 (39%)</td>
</tr>
<tr>
<td>Increased mucus</td>
<td>72 (56%)</td>
<td>73 (66%)</td>
</tr>
<tr>
<td>Lack of saliva</td>
<td>31 (24%)</td>
<td>36 (33%)</td>
</tr>
<tr>
<td>Loss of appetite</td>
<td>30 (23%)</td>
<td>24 (22%)</td>
</tr>
<tr>
<td>Loss of teeth</td>
<td>28 (22%)</td>
<td>31 (28%)</td>
</tr>
<tr>
<td>Nausea</td>
<td>11 (9%)</td>
<td>16 (15%)</td>
</tr>
<tr>
<td>Neck/throat pain</td>
<td>26 (20%)</td>
<td>41 (37%)</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>50 (39%)</td>
<td>44 (40%)</td>
</tr>
<tr>
<td>Shoulder pain</td>
<td>34 (26%)</td>
<td>45 (41%)</td>
</tr>
<tr>
<td>Other</td>
<td>14 (11%)</td>
<td>33 (30%)</td>
</tr>
</tbody>
</table>
DISCUSSION

It can be implied from this study that there are more similarities than differences in the background characteristics and rehabilitation needs of laryngectomized males and females. To summarize, the males and females who participated in this study:

- showed similar patterns of pre- and postoperative tobacco and alcohol use;
- were referred equally for radiation and chemotherapy treatment;
- received speech therapy services, usually in individual rather than group treatment sessions;
- received counseling, psychotherapy, and occupational therapy in equally small numbers;
- communicated often; used multiple methods; used the artificial larynx, esophageal speech, and tracheoesophageal speech in that order of frequency; and perceived themselves as successful with familiar and unfamiliar adult listeners;
- learned their primary method of communication from a speech-language pathologist and self-instruction or trial and error;
- identified spouses, partners, family, and friends as important sources of support; and
- perceived that important pre- and postoperative information came most frequently from the physician or surgeon and the speech-language pathologist.

Both groups apparently recognized the dangers of continued alcohol and tobacco use, as evidenced by dramatic reductions in their use following laryngectomy. Understanding the role that smoking and drinking played in their diagnosis may spur these individuals to persuade others not to indulge. For example, many Lost Chord Club members volunteer to talk with school groups regarding the risks of smoking.

Both groups were confident in their perceived success of communication. Respondents were not queried regarding the circumstances related to the length of therapy services (e.g., whether services were rendered fully or terminated due to limited insurance coverage, financial considerations, health concerns, or transportation issues). Further study is required to determine whether 3 months is an adequate length of time for alaryngeal speech services.

The high incidence of similarities between males and females following laryngectomy confirms the idea that there are experiences, treatments, communication needs, and perceptions of support shared by laryngectomized males and females. The rehabilitative team can feel confident in standardizing much of the basic information offered to patients and their families regarding operative factors, physical factors, communication options, alaryngeal speech therapy, and other rehabilitative services. The responsibilities of various members of the rehabilitation team to provide that information, as well as the inclusion of family in the therapeutic process, are supported.

Some research with other types of cancer patients has suggested that gender may play a less important role in adjustment than other psychosocial and behavioral characteristics (Turk & Okifuji, 1999). Given that there are many similarities between the two groups, it must also be recognized that, within this study’s population, there were important demographic and treatment differences:

- The females were younger at the time of diagnosis and treatment than the males.
- Despite the fact that more females were still working, their average annual income was lower than that of their male counterparts.
- More females had undergone more extensive surgery and suffered recurrence than males.
- A greater percentage of females than males indicated that they had received physical therapy.
- A greater percentage of females reported higher levels of education than did the males.

These findings draw attention to the fact that, in general, the females were younger than their male counterparts at the time of surgery. Although the reasons for these findings are unclear, Gardner (1966), Bagshaw (1967), and Wallen and Webb (1975) also reported that females experienced surgery at younger ages than did males. The implications are that, following laryngectomy, many of these females were pre-retirement age and planned to return to work, therefore needing to develop timely and effective alaryngeal communication methods for their vocations. Consequently, the goals, speed, and social acceptability of speech rehabilitation may differ significantly between some male and female clients. The importance of communication for overall adjustment is underlined by research showing that posttreatment distress is proportional to the extent of communication problems with friends and relatives (Friedman, Lehane, Webb, Weinberg, Cooper, 1994). The lower annual income reported by the females might impact their ability to pay for treatment and rehabilitative services. Information regarding community resources, group therapy, and financial assistance may be necessary to ensure that they receive the services they require.

The finding of more extensive surgical procedures for the females was noted in Bagshaw’s (1967) study as well. A greater percentage of females than males received physical therapy, which may be related in part to their surgical histories. If a radical neck dissection is an indication of more advanced laryngeal cancer, then it is not surprising that 8% of the females and only 2% of the males reported a recurrence of cancer. Of clinical importance is the need to educate laryngectomized patients, females in particular, regarding the signs of recurrence and the significance of regular checkups with their physician/surgeon.

The fact that 20% of the males did not complete high school raises concerns regarding literacy. Determination of vocabulary level and reading and writing skills assists the clinician during the provision of information regarding the surgery, pre- and postoperative counseling, and the preparation of therapy materials and activities (Graham, 1997).
The conclusion is that females appear to have unique concerns regarding their physical, occupational, and financial conditions. An awareness of these differences should prompt the rehabilitation specialist to ask specific questions and to identify appropriate resources and referrals in anticipation of the patient’s needs. The interview should be used to facilitate the rehabilitative processes of information giving, expression and exploration of feelings, problem solving, and planning for future action.

In answer to the research question, “Are there differences in the rehabilitative needs of laryngectomized males and females?”, the most noteworthy differences between the males and females in this study were the following:

- Females identified almost one-third more postoperative physical complaints than did their male counterparts.
- Females did not name the physician or surgeon as a key provider of important information postoperatively as frequently as the males did.
- Females were more likely than males to depend on friends who were not laryngectomized for their adjustment to life after surgery.
- Females preferred family gatherings, reading, church services, and non-laryngectomized social groups.
- Males benefited from Lost Chord Club meetings, their work setting, and reading.

The first two findings have important implications for the rehabilitation specialists who treat individuals, females in particular, with laryngeal cancer. Salva and Kallail (1989) also reported that the surgeon was perceived as more helpful by the males than by the females. Gijsbers Van Wijk, Van Vliet, and Kolk (1996) emphasized that females experience health problems differently than males and consequently have different needs and expectations of their health care providers. They suggested that females are often stereotyped within the health care profession as “suffering disproportionately from ‘vague,’ medically unexplained physical complaints and ailments as well as from emotional problems” (p. 711), even with respect to laryngeal cancer. According to Gijsbers Van Wijk et al., the remedy lies in health care providers becoming more sensitive to gender differences, taking health complaints seriously, and considering the physical, psychological, and societal aspects of health and illness.

Research with other types of cancer patients indicates that gender differences may occur in overall patterns of adjustment. A number of studies have indicated that among patients with cancer of other sites, female patients tend to report more treatment-related problems and overall distress (Friedman et al., 1994; Keller & Henrich, 1999; Liang, Dunn, Gorman, & Stuart-Harris, 1990). Further analysis of these findings suggests that, despite these differences, male and female patients may be equally well-adjusted (Keller & Henrich, 1999). Male patients may have a tendency to cope with their condition with massive denial of the severity of their illness and the presence of symptoms (Leigh, Percarpio, Opsahl & Ungerer, 1987; Leigh, Ungerer, & Percarpio, 1980), often in inverse proportion to their extent. Thus, the differences noted between males and females with laryngectomies may indicate either that females actually experience more postoperative complaints or that they are more accurate historians. Knowing this, clinicians should not accept general statements at face value but should ask follow-up questions regarding each patient’s health and functional status. Information gathered by the clinician may be vital to the ongoing treatment of the patient by the physician.

Within the last 20 years, QOL and functional status have been recognized as important outcome variables in the treatment of individuals with head and neck cancer (List et al., 1996). The QOL research indicates that QOL is subjective and is judged exclusively from the patient’s perspective. Negative attitudes and unresolved fears experienced by the individual may impair the rehabilitation process. Expressions of fear, anger, depression, and guilt surrounding the loss; feelings of self-loss; being handicapped; unaccustomed dependence on others; a heightened sense of aging; and increased awareness of one’s mortality may surface. Of specific concern to the clinician are reports of limited social life; reduced interaction with relatives, friends, and strangers; perceived loss of control; embarrassment; and dislike of the sound of alaryngeal speech methods. The individual may relay fears concerning the recurrence of cancer, death, loss of speech, generalized anxiety, inability to call for help in an emergency, suffocation, and rejection by strangers, friends, and family.

Because society places considerable emphasis on the attractiveness of the female form, the laryngectomized woman may have concerns and anxieties about her appearance related to surgical scars and the stoma. She may react negatively to the altered quality and lowered pitch of her alaryngeal voice. Awareness of the individual’s feelings regarding her appearance and perception of her new voice can provide the opportunity for open discussion of these issues.

The family support system for the individual is a critical component of the rehabilitation process (Graham, 1997; Salva & Kallail, 1989). The same percentage of females in Gardner’s study (1966) as in this study named friends as the most supportive group postoperatively (50%). The clinician is committed to providing a supportive atmosphere and, in the process, family and close friends are encouraged to attend the session. These are the persons who have the potential to encourage and support the individual in his or her adaptation to postoperative changes and the acquisition of functional communication methods. The more informed the family is about alaryngeal rehabilitation and the more they are included in the process, the more likely they are to cooperate as members of the team.

The males prioritized beneficial activities differently than the females, and not all of the higher ranked interests were socially based. The clinician should not assume that all of these individuals automatically prefer to be with other laryngectomized people, nor that these individuals desire social interactions at all. For example, almost one-half of the females and one-fifth of the males in this study found solace in reading.
AN INTERVENTION PROTOCOL: AN APPLICATION

Preoperative Contact With the Individual and the Family

A preoperative consultation between the speech-language pathologist and the individual (and his or her family) affords a number of benefits:

- The interaction provides an opportunity for the speech-language pathologist to provide basic information and answer questions about the laryngectomy procedure and alaryngeal speech rehabilitation (e.g., altered method of breathing, the loss of the larynx and new ways of voicing, the “normal” presence of nasogastric and intravenous tubes postoperatively, and tracheostoma care). Imagery and anatomic illustrations may be used to facilitate understanding. Communication options are reviewed briefly.
- The consultation launches a positive working relationship between the speech-language pathologist and the individual. The clinician, by using active listening skills and demonstrating a genuine interest in and concern for the individual, promotes the trust needed for a healthy therapeutic interaction to follow.
- The consultation allows analysis of the individual’s habitual speech pattern for future reference. An audio recording of connected speech provides a long-term record of the individual’s preoperative speech characteristics and intelligibility (i.e., regional dialect or foreign accent, dysfluency, dysarthria, misarticulations).
- The interaction assists in preparation of a postoperative rehabilitation plan by the determination of the patient’s cognitive function, audiologic status, and reading and writing levels—all critical to the selection of stimuli.

The Postoperative Interview and Assessment Process

Postoperatively, the speech-language pathologist conducts a face-to-face interview regarding operative, physical, social, and communication factors that have the potential to influence alaryngeal speech rehabilitation. Expressed attitudes and fears of the individual are noted. The intake interview is a time for information giving, expression and exploration of feelings, problem solving, and planning for future action. The individual’s family and friends remain important partners in the rehabilitation process. Issues that may arise, for both the laryngectomized individual and the family, include the following:

- expressions of fear, anger, depression, and guilt surrounding the loss;
- feelings of self-loss, being handicapped, dependence on others, heightened sense of aging, and increased awareness of one’s mortality;
- concerns about how to interact with relatives, friends, and strangers;
- concerns about employment and related economic security;
- anxiety about one’s appearance and the quality of the alaryngeal voice—be it generated by the artificial larynx, esophageal speech methods, or the tracheoesophageal prosthesis (The females in the Gardner study [1966] blamed their surgical scars and stoma for reduced attractiveness, felt the surgery made them less feminine, and reported difficulty expressing affection. Almost half of these females’s husbands expressed revulsion and irritation in connection with the loss of their wives’ voices.); and
- the need for accurate, supportive, and appropriate information regarding life following laryngectomy. Prime resources for referral include organizations such as the Lost Chord or New Voice Clubs, the IAL, up-to-date web sites about alaryngeal issues, and publications such as Self Help for the Laryngectomy (Lauder, 1994).

Oral Communication Options

The ultimate goal of alaryngeal speech rehabilitation is to facilitate the development of functional, intelligible speech. The physician and the speech-language pathologist should be active and influential participants in the patient’s selection of a communication technique. Often, the individual is encouraged to learn more than one of the alaryngeal speech methods based on differing communication partners, situations, and needs.

Alaryngeal Speech Sessions

Instruction for the use of the artificial larynx, esophageal speech methods, or tracheoesophageal prosthesis is conducted in individual and small group sessions. Two to three individuals are grouped by level of acquisition (e.g., beginning, intermediate, or advanced). Attending family members or friends are encouraged to participate actively in the learning process, strengthening their ability to assist in the generalization of the newly learned communication methods to the home environment.

In the authors’ experience, specialized instructions and practice of the alaryngeal speech methods as well as counseling about specific physical, psychological, social, and economic issues can occur in both individual and small group therapy. In particular, the group situation allows observation of other laryngectomized people (and their families), expanding one’s perspective of alaryngeal speech rehabilitation for various stages of rehabilitation. Group members have the potential to be excellent role models and sources of information to each other. Stone and Hamilton (1986) referred to group therapy as “a social learning laboratory in which clients can develop attending behavior, listening skills, turn-taking rather than interrupting a speaker, augmentation of body language,
and alternative ways of expressing unpopular or threatening ideas” (p. 53).

Group therapy has been used for many years to facilitate individual members’ abilities to learn to recognize and cope with personal stress. In the sense that the members are there for a common purpose, the group is homogenous. In this sheltered environment, newly learned communication skills are practiced. Group therapy serves as a transition between individual therapy and the outside world in terms of the demands of communication. A variety of themes—education, speech activities, social interaction, and support counseling—are used to facilitate learning, communication, and adjustment of the individual (Graham, 1997).

Education. Although topics vary widely, the underlying purpose of these sessions is to promote a better understanding of alaryngeal speech rehabilitation. Subject to discussion are anatomical and physiologic changes, medical conditions and procedures, methods of alternative communication, alaryngeal speech products and services, diet and alaryngeal speech, rules of etiquette, decreased visual or hearing acuity, and choosing goals for alaryngeal speech.

Speech activities. Structured communication situations are devised by the clinician based on the methods of communication, the levels of production, and the needs of the individuals within the group. Included are warm-ups, consonant contrast drills, contrastive stress drills, or other goal-specific tasks related to learning and practicing esophageal speech, speech using the artificial larynx, or tracheoesophageal speech.

Social interaction. In addition to developing clear and intelligible speech, all members of the group are encouraged to become more perceptive and efficient communicators. A good communicator is a good listener as well as a good speaker. Goals address heightening one’s sensitivity to the listener’s needs, observing turn taking, staying within the time limits of the conversational situation, and checking frequently to make sure the message has been understood by the listener.

Support counseling. Individuals and their families sometimes struggle for the resumption of effective functional activities of daily living. Within the group discussion, members address, share, and learn ways to cope with problems that block recovery of presurgical lifestyle and attitude. They examine and explore issues such as problem-solving abilities, reality testing, psychological fears, and sense of loss.

Monitoring Progress

The goal of the alaryngeal speech rehabilitation team is that every individual with a laryngectomy achieve functional communication using the method(s) that is most efficient for his or her situation. Periodically in the therapeutic process, the speech-language pathologist discusses with the individual and the family progress in terms of communication skills and psychosocial adjustment. Because no two individuals are exactly alike, no two therapies are exactly alike. To meet the challenges of alaryngeal speech successfully, both the clinician and the client must give their best performance. The proficient clinician bears the responsibility of being knowledgeable of all aspects of alaryngeal speech rehabilitation—how the disease, treatment, and rehabilitation efforts impact the individual—thus maintaining a keen awareness for the need to modify certain clinical strategies based on individual client needs.

CONCLUSION AND SUGGESTIONS FOR FURTHER RESEARCH

With regard to the prevalence of the various problems existing as a result of treatment for laryngeal cancer, estimates vary widely. There are several reasons for this variation, relating to the methods of gathering data for this population. First, there is the obvious problem of mortality. Although many patients are treated successfully for laryngeal cancer, and the 5-year survival rate for patients with early-stage laryngeal cancer is estimated at 83% (American Cancer Society, 1999), inevitably, rehabilitation data about patients who do not survive long postoperatively cannot be included in such studies. This omission may result in a positively skewed bias. Alternatively, poorly rehabilitated patients who have withdrawn from society will be less likely to participate in outcomes studies, again producing positively skewed results. This concern applies even to studies conducted by questionnaire because mailing lists for respondents are often obtained through social support groups such as Lost Chord Clubs and the IAL, which would tend to exclude socially isolated individuals.

Questionnaires have been distributed to persons attending conventions or to groups such as Lost Chord Clubs. Both of these sampling methods suffer from the potential bias inherent in any study gathering data only on volunteers. Finally, studies that involve a convenience sample based on the medical records of a hospital or medical center may not be generalizable to patients outside that geographic area and may tend to overrepresent patients with medical coverage that covers ongoing medical treatment or are more personally affluent. The patients who are least likely to attend conferences or to be receiving ongoing medical care, it is assumed, are those who are most at risk for poor postoperative rehabilitation.

For these reasons, the current study was designed to gather data on a randomly selected national sample, which would provide a more representative indication of the current state of alaryngeal rehabilitation. The names and addresses of individuals for this study were obtained from the IAL, a support and advocacy group with an estimated membership of 7,200 (IAL, 2002). This method of recruiting participants for a study has been used by other researchers (e.g., Blood et al., 1994; Wallen & Webb, 1975) as a means of obtaining participants from a variety of geographic locations without compromising confidentiality, as would be necessary if names were provided by a medical facility.

It is important to consider the impact of this sampling method on potential results. Perhaps the membership in a support group of this type promotes better outcomes, and therefore the individuals on the IAL mailing list are better
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