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<td><strong>Other Contributor(s)</strong></td>
<td>University of Hong Kong</td>
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<td><strong>Author(s)</strong></td>
<td>Lo, Oi-yan, Christine; 盧愛茵</td>
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Differences in management strategies for hyperfunctional voice disorders between speech therapists and student speech therapists.

Lo Oi Yan, Christine

A dissertation submitted in partial fulfillment of the requirements for the Bachelor of Science (Speech and Hearing Sciences), University of Hong Kong, May 10, 2000.
ABSTRACT

This study surveyed on the differences in the management strategies for hyperfunctional voice disorders between speech therapists and student speech therapists. Seventeen speech therapists and twenty-nine student speech therapists completed a questionnaire which included a hypothetical case of hyperfunctional voice disorder.

The present study had the following findings. Firstly, the present study revealed that counseling, elimination of abuse and relaxation were the three most popular therapy methods used for adult with hyperfunctional voice disorders in Hong Kong. Secondly, elimination of abuse, open-mouth approach and humming were perceived as the three most effective therapy methods used in Hong Kong. There was a discrepancy between the frequency used of the therapy methods and the perceived effectiveness. Thirdly, speech therapists chose therapy methods because of their experience that found the method was effective only were more frequently than what student speech therapists did. Fourthly, student speech therapists recommended more hours for the whole therapy than what speech therapists did. Finally, speech therapists considered the acoustic measurement to be more preferable than what student speech therapists did. Student speech therapists considered the perceptual voice evaluation to be more preferable than what speech therapists did.

It provided valuable information because first, one could determine whether validated effective management strategies are appropriately employed by practicing speech therapists and second, educators in speech pathology could determine whether student speech therapists are receiving the appropriate training in the current practice. Finally, the management strategies for hyperfunctional voice disorder are considered to be useful for planning the curriculum for training student speech therapists.

Key words: hyperfunctional voice disorder, management strategies.
INTRODUCTION

Vocal hyperfunction refers to excessive muscle force or physical effort in respiration, phonation and resonance (Boone & McFarlane, 1994). Hyperfunctional use of the voice is often viewed as a major causative factor for vocal polyps and vocal nodules (Hillman, Holdmerg, Perkell, Walsh & Vaughan, 1989).

In Hong Kong, adults (25-64 years old) comprise more than 75% of individuals with voice disorders seeking voice therapy (Yiu & Ho, 1991). A high proportion (70%) of vocal pathology occurred in individuals whose jobs demand frequent voice use, such as housewives, teachers, workers/labourers, students and clerks (Yiu & Ho, 1991). The vocal nodule was the most common laryngeal pathology found among the kind of people mentioned above (Yiu & Ho, 1991). Since hyperfunctional voice disorder is the major type of voice disorder in Hong Kong, it is more useful for clinical training of student speech therapists to find out more information on how this type of voice disorder is managed by the speech pathology profession in Hong Kong.

According to Ramig & Verdolini (1998), the goal of treatment for hyperfunctional voice disorder is to reduce laryngeal hyperfunction, counteract muscular imbalance and optimize laryngeal health in order to reduce or eliminate the vocal fold lesion and to improve the voice quality.

Different treatment methods for voice disorder patients have been documented in the literature. (Allen, Pettit & Sherblom, 1992; Boone & McFarlane, 1994; Dunnet, Mackenzie, Sellars, Robinson and Wilson, 1997; Elias, Raven, Butcher & Littlejohns, 1989; Larson & Mueller, 1992; Madison, Meadors & Miller, 1984; Muller & Larson, 1992; Pannbacker, 1998; Sataloff, 1987b; Verdolini-Marston, Burke, Lessac, Glaze, & Caldwell, 1995 and Verdolini-Marston, Sandage & Titze, 1994). However, only some of these methods are suitable for hyperfunctional voice disorders. For example, Boone & McFarlane (1994) gave a list of twenty-five facilitating voice therapy methods and suggested that fifteen of them were
specifically useful for treating hyperfunctional voice disorders. These include change of loudness, chant talk, counseling (explanation of problem), digital manipulation, elimination of abuses, elimination of hard glottal attack, establishing a new pitch, glottal fry, head positioning, hierarchy analysis, nasal/glide stimulation, open-mouth approach, relaxation, respiration training and yawn-sign.

Information has been gathered in England (Elias et al., 1989) and North America (Miller & Larson, 1992; Shearer, 1972) on the voice therapy method used by speech pathologists for treating voice disorders. Although voice disorder is the major caseload of hospital speech pathology clinics in Hong Kong, there has been little work done so far on what the common therapeutic management strategies are for voice disorders. Such information is important because first, one could determine from the information whether validated effective therapeutic strategies are appropriately employed by practicing speech therapists and second, educators in speech pathology could determine whether student speech therapists are receiving the appropriate training in the current practice.

Karnell (1991) contended that “the success of voice therapy largely depends on the selection of an appropriate treatment for the problem at hand” (p.213). However, the choice of treatment approach could be highly varied. For example, Verdolini-Marston, Burke, Lessac, Glaze, & Caldwell (1995) found that the type of therapy method depends not only on diagnostic category or client characteristics, but also the clinician’s preferences. Shearer (1972) also reported that “preference for the most effective approach varied according to the clinician” (p.220). Raven, Butcher & Littlejohns (1989) claimed that there was difference in speech therapists’ training, practice and attitude towards treating psychogenic dysphonia. Therefore, there are considerable differences among the speech therapists in choosing the therapy method.

This study was therefore designed to survey the current practice among speech therapists in Hong Kong in managing hyperfunctional voice disorder. This study also attempted to
compare the management strategies used by speech therapists and those used by final year student speech therapists in Hong Kong. This valuable information on the management strategies for hyperfunctional voice disorder is considered to be useful for planning the curriculum for training student speech therapists as well.

**OBJECTIVES**

This study aimed

1. To determine what the therapy methods were in managing hyperfunctional voice disorders in Hong Kong.

2. To compare the perception on the effectiveness of the selected therapy methods between speech therapists and student speech therapists.

3. To compare the reason for choosing a particular therapy method for hyperfunctional voice disorders between speech therapists and student speech therapists.

4. To compare the total therapy duration for hyperfunctional voice disorders between speech therapists and student speech therapists.

5. To compare the differences in the outcome measure for hyperfunctional voice disorders between speech therapists and student speech therapists.

**HYPOTHESIS**

It was hypothesized that there was a significant difference in the choice of the management strategies for hyperfunctional voice disorders between speech therapists and student speech therapists.
METHOD

Subjects

All the Hong Kong speech therapists employed by Hospital Authority were faxed with an inviting letter for participating in this study. This included a total of thirty-four speech therapists. Thirty final year student speech therapists were also invited to participate in the study.

A questionnaire was designed with the first part consisted of a description of a hypothetical case in the format of a brief otolaryngological referral letter (See Appendix 1). Respondents were required:

a. To state whether they would recommend voice therapy for the case

b. If they recommended therapy, they had to select appropriate therapy methods from a list of fifteen methods or to suggest their own methods for the case. The therapy methods were copied from those suggested by Boone & McFarlane (1994), Colton & Casper (1996), Prater (1991) and Pannbacker (1998) (See Appendix 1).

c. To state the reasons for choosing the particular treatment method.

d. To rate the efficacy for the selected treatment methods (score three = excellent, score two = good and score one = fair).

e. To rank the outcome measures used to ascertain the efficacy of the selected treatment methods (score six = first choice, score five = second choice, score four = third choice, score three = fourth choice, score two = fifth choice, score one = sixth choice).

f. To suggest the total therapy duration (It equals to number of therapy session times duration of each therapy session).

The second part of the questionnaire was used to collect background information of the respondents (See Appendix 2).

A preliminary version of the questionnaire was piloted on a speech therapist who had five years experience in assessing and treating patient with voice disorders. The wordings and
format were amended following the comments.

Procedures

The subjects were contacted by telephone to ensure the willingness in participation. The questionnaires were mailed to those who indicated they were interested in this study. The questionnaire, with the exception of the background information, were given to student speech therapists (See Appendix 3).

RESULTS

Response rate and background of the respondents

The return rate was 50% (17 questionnaires) for the speech therapists and 97% (29 questionnaires) for the student speech therapists. The return rate was acceptable as the return rate of most of the questionnaire-type survey is around 50% (Moser and Kalton, 1971). All subjects completed the questions with no missing data. Twenty-eight of the student subjects were females and one was a male. Twenty-seven (93%) of them had encountered voice cases during their clinical placement. Sixteen of the speech therapist subjects were females and one was a male. They came from eight different hospitals or polyclinics of the Hospital Authority in Hong Kong. Thirteen (76%) were trained in Hong Kong, two (12%) were trained in Australia and two (12%) were trained in United Kingdom. The speech therapists had a mean of 4.2 years (range: 1-11) of experience in assessing and treating patients with voice disorder. They saw an average of 2.5 (range: 0.3-6) voice patients per day in the last twelve months. A major proportion of the voice patients were adult (87%). Eight (47%) attended varied courses on voice therapy after graduation. The courses included instrumentation used in assessing voice disorder, effectiveness of therapy methods, voice-craft, voice evaluation and therapy, voice therapy methods and ways to decrease voice problem caused by hyperfunction.
Recommendation for voice therapy

All the respondents, both the speech therapists and student speech therapists, agreed that voice therapy should be given to the hypothetical case.

Choices of therapy methods

Table 1. Top ten selected therapy methods according to choice of the respondents.

<table>
<thead>
<tr>
<th>Therapy methods</th>
<th>Number of subject choosing the therapy method (N=46)</th>
<th>Number of speech therapist choosing the therapy method (N=17)</th>
<th>Number of student speech therapist choosing the therapy method (N=29)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counseling</td>
<td>44 (96%)</td>
<td>16 (94%)</td>
<td>28 (97%)</td>
</tr>
<tr>
<td>Elimination of abuse</td>
<td>42 (91%)</td>
<td>16 (94%)</td>
<td>26 (90%)</td>
</tr>
<tr>
<td>Relaxation</td>
<td>39 (85%)</td>
<td>15 (88%)</td>
<td>24 (83%)</td>
</tr>
<tr>
<td>Yawn-sigh</td>
<td>37 (80%)</td>
<td>13 (76%)</td>
<td>24 (83%)</td>
</tr>
<tr>
<td>Nasal glide/humming</td>
<td>31 (67%)</td>
<td>13 (76%)</td>
<td>18 (62%)</td>
</tr>
<tr>
<td>Respiration training</td>
<td>26 (57%)</td>
<td>15 (88%)</td>
<td>11 (38%)</td>
</tr>
<tr>
<td>Reduce loudness</td>
<td>22 (48%)</td>
<td>6 (35%)</td>
<td>16 (55%)</td>
</tr>
<tr>
<td>Chewing</td>
<td>11 (24%)</td>
<td>4 (24%)</td>
<td>7 (24%)</td>
</tr>
<tr>
<td>Open-mouth approach</td>
<td>9 (20%)</td>
<td>5 (29%)</td>
<td>4 (14%)</td>
</tr>
<tr>
<td>Chant talk</td>
<td>8 (17%)</td>
<td>2 (12%)</td>
<td>6 (21%)</td>
</tr>
</tbody>
</table>

Table 1 shows that 96%, 91% and 85% of speech therapists and student speech therapists agreed that counseling, elimination of abuse and relaxation would be their choice of therapy methods. Test of proportion shows that there is significant difference of choice of respiration training between speech therapists and student speech therapists (Z=2.994, p=0.003) only. There were no significant differences of choice of other nineteen therapy methods between the speech therapists and student speech therapists. Speech therapists considered respiration training to be more frequently used than what student speech therapists considered.
Perception of the effectiveness of therapy methods

Table 2. Mean scores of the effectiveness of top ten therapy methods of speech therapists and student speech therapists.

<table>
<thead>
<tr>
<th>Therapy methods</th>
<th>Total mean score of effectiveness</th>
<th>Mean score of effectiveness of speech therapists</th>
<th>Mean score of effectiveness of student speech therapists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination of abuse</td>
<td>2.42</td>
<td>2.38</td>
<td>2.46</td>
</tr>
<tr>
<td>Open-mouth approach</td>
<td>2.25</td>
<td>2.00</td>
<td>2.50</td>
</tr>
<tr>
<td>Nasal glide/ humming</td>
<td>2.24</td>
<td>2.25</td>
<td>2.22</td>
</tr>
<tr>
<td>Yawn-sign</td>
<td>2.19</td>
<td>2.33</td>
<td>2.04</td>
</tr>
<tr>
<td>Counseling</td>
<td>2.07</td>
<td>2.06</td>
<td>2.07</td>
</tr>
<tr>
<td>Accent Method</td>
<td>2.00</td>
<td>1.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Reduce loudness</td>
<td>1.97</td>
<td>2.00</td>
<td>1.94</td>
</tr>
<tr>
<td>Respiration Training</td>
<td>1.95</td>
<td>2.27</td>
<td>1.64</td>
</tr>
<tr>
<td>Chant talk</td>
<td>1.84</td>
<td>2.00</td>
<td>1.67</td>
</tr>
<tr>
<td>Digital manipulation</td>
<td>1.84</td>
<td>2.00</td>
<td>1.67</td>
</tr>
</tbody>
</table>

Maximum score for therapy method with excellent effectiveness was 3 and minimum score for therapy method with fair effectiveness was 1.

Mean score of effectiveness equals to the sum of scores of a particular therapy method over the total number of respondents choosing it.

These methods which were perceived as the most effective were elimination of abuse, open-mouth approach and nasal glide/ humming.

Mann-Whitney U test shows that there was a significant difference in the mean score of effectiveness between speech therapists and student speech therapists in respiration training (U=80.5, p<0.05) only. Speech therapists considered (mean score of 2.27) respiration training to be more effective than what student speech therapists (mean score of 1.64) did. There were no significant differences of mean score of effectiveness of other nineteen therapy method between speech therapists and student speech therapists.
Reasons for the selected therapy methods

Table 3. Reasons for the selected therapy methods as reported by speech therapists and student speech therapists

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Learn from university training</td>
<td>204</td>
</tr>
<tr>
<td>My working experience has shown that it is effective</td>
<td>114</td>
</tr>
<tr>
<td>The literature has shown that it is effective</td>
<td>79</td>
</tr>
<tr>
<td>Learn from specialized courses conducted by other speech pathologists</td>
<td>65</td>
</tr>
<tr>
<td>Used by other colleagues</td>
<td>64</td>
</tr>
</tbody>
</table>

Table 3 shows that the most common reason of speech therapists for choosing a particular therapy method was due to the working experience that found the method to be effective. This was followed by the reason that speech therapists learned them from university training. The most common reason of student speech therapists for choosing a particular therapy method was due to the learning from university training.

Test of proportion showed that there was significant difference of reason for choosing a particular therapy method was due to the working experience that found the method to be effective between speech therapists and student speech therapists in all their selected therapy methods ($p<0.05$). Speech therapists chose the therapy methods because of their experience were more frequently than what student speech therapists did. There were no significant differences in other reasons between speech therapists and student speech therapists.

Total therapy duration (in hour)

Mann-Whitney U test showed that there was significant difference in the total therapy duration between speech therapists and student speech therapists ($U=142.5$, $p<0.05$). Student speech therapists recommended more hours for the whole therapy (mean: 5.5; range: 2-12) than speech therapists recommended it (mean: 3.9; range: 2.3-7.5).
Table 4. Mean scores of the choice of outcome measure of speech therapists and student speech therapists

<table>
<thead>
<tr>
<th>Outcome measure</th>
<th>Total mean score</th>
<th>Mean score of speech therapists (N=17)</th>
<th>Mean score of student speech therapists (N=29)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceptual voice evaluation</td>
<td>5.39</td>
<td>5.12</td>
<td>5.66</td>
</tr>
<tr>
<td>Client report</td>
<td>4.52</td>
<td>4.65</td>
<td>4.38</td>
</tr>
<tr>
<td>Acoustic measurement</td>
<td>4.00</td>
<td>4.76</td>
<td>3.24</td>
</tr>
<tr>
<td>Videostroboscopic analysis/ laryngoscopy</td>
<td>2.66</td>
<td>2.94</td>
<td>2.38</td>
</tr>
<tr>
<td>Aerodynamic measurement</td>
<td>1.55</td>
<td>1.12</td>
<td>1.97</td>
</tr>
<tr>
<td>Laryngography-open quotient</td>
<td>0.205</td>
<td>0.41</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4 shows that the top choice of outcome measures of speech therapists was perceptual voice evaluation, followed by acoustic measurement and client report. The top choice of outcome measures of student speech therapists was perceptual voice evaluation, followed by client report and acoustic measurement.

Mann-Whitney U test showed that there was significant difference in the mean score of outcome measures between speech therapists and student speech therapists in acoustic measurement (U=145.5, p<0.05) and perceptual voice evaluation (U=217.5, p<0.05). Speech therapists considered the acoustic measurement (mean score of 4.76) to be more preferable than what speech therapist students (mean score of 3.24) did. Student speech therapists considered the perceptual voice evaluation (mean score of 5.66) to be more preferable than what speech therapists (mean score of 5.11) did. There were no significant differences in the mean score of other four outcome measures (including client report, videostroboscopic analysis, aerodynamic measurement and laryngography) between speech therapists and student speech therapists.
DISCUSSION

A primary objective of this study was to find out which treatment methods are commonly used in treating adults with hyperfunctional voice disorders in Hong Kong. It was revealed that counseling, elimination of abuse and relaxation were the three most popular therapy methods used in Hong Kong.

The second objective was to investigate and compare the perception of the speech therapists and student speech therapists on the effectiveness of their selected therapy methods. It was revealed that elimination of abuse, open-mouth approach and nasal glide/ humming were perceived as the three most effective therapy methods used in Hong Kong. Speech therapists considered only respiration training to be more effective than what student speech therapists did. It showed that there was a discrepancy between the frequency used of the therapy methods and the perceived effectiveness.

The third objective was to investigate the reason for choosing a particular therapy method for hyperfunctional voice disorders between speech therapists and student speech therapists. It was revealed that speech therapists chose the therapy methods because of their experience that found the method was effective only were more frequently than what student speech therapists did.

The fourth objective was to investigate the total therapy duration for hyperfunctional voice disorders between speech therapists and student speech therapists. The study found that student speech therapists recommended more hours for the whole therapy than speech therapists did.

The fifth objective to compare the differences in the outcome measure for hyperfunctional voice disorders between speech therapists and student speech therapists. Speech therapists considered the acoustic measurement to be more preferable than what student speech therapists did. Student speech therapists considered the perceptual voice evaluation to be more preferable than what speech therapists did. There were no significant
differences in the preference of choosing a particular outcome measures including client report, videostroboscopic analysis, aerodynamic measurement and laryngography) between the speech therapists and student speech therapists.

Recommendation of voice therapy

All the respondents (N=46) recommended voice therapy for the hyperfunctional voice disorder patient in the hypothetical case. The result was consistent with a research concerning the outcome of management pattern for vocal nodules patient. Lancer, Syder, Jones and Boutillier (1988) support the offer of speech therapy for all vocal nodule patients. Speech therapy is aimed at eliminating the vocal abuse and misuse which are probably the most important aetiological factors for vocal nodules. It also helps reducing the incidence of recurrence after treatment in vocal nodule patients.

Choice of therapy methods

A primary objective of this study was to find out which treatment methods are commonly used in treating adults with hyperfunctional voice disorders in Hong Kong. The three most commonly used therapy methods in the present study were similar to those reported by Larson & Mueller (1992). Their survey found that counseling, reduction of vocal abuse and hard glottal attack, and relaxation methods were the preferred voice therapy methods for the adult patients with voice disorders.

Perception of the effectiveness of therapy method

The second objective was to investigate and compare the perception of the speech therapists and student speech therapists on the effectiveness of their selected therapy methods. This study revealed that speech therapists considered only respiration training to be more effective than what student speech therapists did. Moreover, it showed that there was a
discrepancy between the frequency used of the therapy method and its perceived effectiveness. This study revealed that speech therapists and student speech therapists selected counseling as the first most commonly used therapy method, but they did not percept it as the highest effective one. Although relaxation was selected as the third most commonly used therapy method, speech therapists and student speech therapists perceived it as out of the top ten effective therapy methods. It was suggested that the priority of which they select the therapy methods did not follow the order of their perceived effectiveness of the therapy methods.

Reason for choosing a particular therapy method

The third objective was to investigate reason for choosing a particular therapy method for hyperfunctional voice disorders patient between speech therapists and student speech therapists. It was revealed that speech therapists chose the therapy methods because of their experience that found the method was effective only were more frequently than what student speech therapists did. Pannbacker M. (1998) claimed that clinical practice should be based on what is proven, not on what is popular. That means it should be guided by data about outcome. The choice of therapy method should be based on the effectiveness shown in the literature. The study revealed that majority of speech therapists reported their reasons for choosing a particular method due to their experience finding the particular method to be effective. Majority of student speech therapists reported their reasons for choosing a particular method because that was what they learned from their training. For the three most commonly used therapy methods (counseling, elimination of abuse and relaxation), 33% of speech therapists and 19% of student speech therapists who preferred these methods reported that their choice was based on the demonstrated effectiveness reported in the literature. It shows that higher percentage of speech therapists put greater emphasis and concern in the effectiveness of selecting therapy methods than student speech therapists did.

It was disappointing to find out that the reason of being shown by the literature as
effective was only ranked as the third most common reason by the respondents. It maybe due to the fact that there is not much efficacy information in the literature. Further research on efficacy of therapy methods are highly recommended in order to give more information for speech therapists and student speech therapists choosing an appropriate therapy method.

**Total therapy duration**

The fourth objective was to investigate the total therapy duration for hyperfunctional voice disorders between speech therapists and student speech therapists. It was revealed that student speech therapists recommended more total hours for the whole therapy (mean: 5.5; range: 2-12) than speech therapists recommended it (mean: 3.9; range: 2.25-7.5). Mueller and Larson study (1992) of American experience where 6-10 hours was the typical treatment time ranges. The total hour spent for the whole therapy in Hong Kong was much less than that of other study. The possible reasons maybe due to the reducing financial in public hospital service in Hong Kong.

Further work is required to find out whether the selection of total therapy duration is mainly determined by available resources, habit usage of setting in different places.

**Outcome measure**

The fifth objective was to compare the differences in the outcome measure for hyperfunctional voice disorders between speech therapists and student speech therapists. The present study found that speech therapists considered the acoustic measurement to be more preferable than what student speech therapists did. Student speech therapists considered the perceptual voice evaluation to be more preferable than what speech therapists did. It was suggested that speech therapists need more objective measurement and evidence for the treatment efficacy for report and record at hospital setting. It may lead to the difference choice of outcome measures of speech therapists and student speech therapists. Stemple (1993) said
that objective measure was a balance and check to subjective measures including the client’s report and perceptual voice evaluation. Therefore, student speech therapists should increase their awareness on the choice of objective measures as outcome measurement. The importance of both objective and subjective outcome measures should be introduced and given more attention when planning the courses on voice therapy for training student speech therapists.

**CLINICAL IMPLICATION**

The present study has several clinical implications. Firstly, speech therapists and student speech therapists should be alerted to the information on the effectiveness of a particular therapy method shown in the literature. They should choose a therapy method based on what is proven, but not on what is popular only. Moreover, more attention should be paid to on the choice of objective measures as outcome measurement. The importance of combination of objective and subjective outcome measures should be given more attention when planning the courses on voice therapy for training student speech therapists.

**CONCLUSION**

This study revealed that different management strategies were utilized by speech therapists and student speech therapists to the hyperfunctional voice disorder patient. There were differences between speech therapists and student speech therapists in the selection and perceived effectiveness of therapy method, the reason why they choose a particular method, the total therapy duration and the outcome measurement. There was also a discrepancy between the popularity and the perceived effectiveness of therapy methods for speech therapists and student speech therapists. Some possible reasons were due to the working experience, the not well-established literatures (which were not proved the validity with larger number of subject and high-quality experimental design) and reducing financial in public
hospital service.

LIMITATION OF THE PRESENT STUDY

There was a methodological issue which posed limitation to the present study. The questionnaire format could not evaluate the wholistic picture of the client in making the decision of choosing a particular therapy method. For example, respondents were unable to evaluate mode of respiration which may affect the choice of respiration training. Moreover, respondents were unable to evaluate facial expression, general posture and emotion of client which may affect the choice of relaxation exercise and counseling. Respondents were also unable to evaluate the loudness level, voice quality, fundamental frequency and oronasal resonance which may affect the choice of reducing loudness and humming. This may disproportionately influence the selection of therapy methods.

FURTHER RESEARCH

In order to maximize applicability and generalizability of findings, future research should be including more comprehensive and thorough experimental design. A videotape of whole assessment session of a client with a high quality auditory taping attached with the questionnaire is recommended. It gives a more thorough picture of a client and his voice quality. The limitation is that the respondent will spend more time completing the questionnaire. It increased the time of completing the whole research and may affect the participation rate.

Research on management strategies for other different voice disorders (e.g. voice disorders related to special medical or physical conditions and voice disorder associated with psychological stress) should be tried to see whether there is any difference or similarity form between speech therapists and student speech therapists. It helps gather information on management strategies used in specific types of voice disorders.

Research on the effectiveness of treatment methods and comparative effects of treatment
methods should be continued. The study showed a discrepancy between the frequency used and perceived effectiveness of therapy methods. Further research including high-quality experimental designs implementing larger group studies should be done in order to evaluate the effectiveness of therapy methods and how to deliver them effectively.
ACKNOWLEDGEMENT

I would like to give my special thanks to the following help and support on completing the questionnaire. Firstly, I would like to thank for all the speech therapists in the following hospitals and clinic: Alice Ho Miu Ling Nethersole Hospital, Kwong Wah Hospital, Pamela Youde Nethesole Eastern Hospital, Queen Mary Hospital, Tang Shiu Kin Hospital, Tuen Mun Polyclinic and Yan Chai Hospital. Secondly, I would like to thank for the final year students in our department. Special thanks for the advice and kindness of Miss Kathy Lee, the speech therapist in Prince of Wales Hospital, on amending and giving advice on the construction of the questionnaire.

Thanks to Dr Whitehill, for her valuable comments on the proposal. Most important, thanks for my kind and helpful supervisor, Dr Edwin Yiu. He really gave me lot of precious comments and advice on my dissertation. His guidance helped me working smoothly and directing the dissertation on the right track. Finally, I would like to thank for all my lovely classmates (especially Chi Yan and Joan), my beloved Alex and my family for their love and care.
REFERENCES


Appendix 1:

There is a case presented on next page. Please read the case history and then answer all the questions that follow.
**Case History:**

A 28-year-old female smoker works as a part time telephone saleslady. She frequently goes to karaoke singing for at least 3 evenings per week. She presents with a hoarseness of more than 7 months. Laryngoscopic examination showed bilateral small vocal nodules on the anterior one-third of the vocal folds.

1. **Would you recommend voice therapy for this patient?**  □ YES  □ NO
   ---If yes, please proceed to question 2.
   ---If no, please state the reasons why no voice therapy is recommended and any other recommendation.

   (If you choose “No”, please proceed to questions on page 7)

*For Question 2 to 4, please use the grid on page 5 to mark your answer.*

*Please refer to the descriptive notes of the therapy methods on page 3-4.*

2. **Which therapy method(s) will you consider using for this patient?**
   (Use the grid on page 5. You can tick more than one choice under the column Q.2.)

3. **How effective do you think the therapy methods you selected in Q.2 are?**
   (Use the grid on page 5 under column Q.3. Put a tick in the box which you think best describe the effectiveness of the methods.)

4. **Why do you choose each of the method in Q2?**
   (Use the grid on page 5. You can tick more than one choice under the column Q.4.)
The descriptive notes of the therapy methods in Q.1:

1. Accent method: It is based on accentuated, rhythmic, speech production in association with abdominal-diaphragmatic breathing. (Pannbacker, 1998)

2. Chant talk: Characterized by an elevation of pitch, prolongation of vowels, lack of syllable stress, and an obvious softening of glottal attack. (Boone & McFarlane, 1994)

3. Chewing: instruct the patient pretending to chew in a relaxed, open-mouth manner and to move the imaginary food around in the mouth with exaggerated tongue movement while engaging in phonation. (Prater, 1991)

4. Confidential voice: (breathy phonation) using the softest intensity one can produce. (Colton & Casper, 1996)

5. Counseling (explanation of problem): direct explanation of the voice problem. It helps the patients to put their voice problem in its proper perspective and identify for the patient those behaviours that maintain the voice problem. (Boone & McFarlane, 1994)

6. Digital manipulation: Digital pressure for lowering pitch, monitoring the vertical movements of the larynx and maneuvering the larynx to a lower neck position. (Boone & McFarlane, 1994)

7. Elimination of vocal abuses: identify the possible vocal abuse and develop its baseline of occurrence. For example, ask the patient to attend to and count the number of vocal abusive behaviours each day. It is used to increase the patient’s self-awareness of abuse behaviours. (Boone & McFarlane, 1994)

8. Glottal fry: Produced in a relaxed manner with little subglottic air pressure and little airflow. It reduces the amount of stress and friction of the compliant folds during phonation. (Boone & McFarlane, 1994)

9. Head positioning: introduce the approach by demonstrating various head positions (different kind of positions change the pharyngeal-oral resonating structures which in turn to change the vocal quality). If an easy, target voice is achieved with a specific kind
of head and neck position, this kind of position would be used during voice practice attempts. (Boone & McFarlane, 1994)

10. Nasal glide/ humming: using words that contain many nasal and glide consonants in order to help the patients to produce desired “target” vocalization. (Boone & McFarlane, 1994)

Resonant voice: voice production which is based on sensation on the alveolar ridge and other facial palates during phonation. (Boone & McFarlane, 1994)

11. Open-mouth approach: opening the mouth more while speaking and learning to listen with a slightly open mouth allow the patient to use their vocal mechanisms more optimally. (Boone & McFarlane, 1994)

12. Reduce loudness: Make the patient beware of the excessive loudness and motivate the patient to learn speaking at normal level. May practice with a quiet voice by using instruments that give specific feedback of intensity. (Boone & McFarlane, 1994)

13. Relaxation: train the patient to concentrate on a particular part of the body, deliberately relaxing and tensing certain muscles, discriminating between muscle contraction and relaxation. The methods include progressive relaxation, head rotation and imagery. (Boone & McFarlane, 1994; Prater, 1991)

14. Respiration training: introduce abdominal breathing to the patient. The patient will take a normal breath and count slowly on one exhalation. Instruct the patient to place on hand on the area of the abdomen and the other on the upper chest to identify the slightly movement of the abdomen area on inhalation with imperceptible movement of the upper chest. (Boone & McFarlane, 1994)

15. Yawn-sign: explaining the physiology of a yawn. Asking the patient to yawn, exhaling gently with a light phonation. Then asking the patient to say words beginning with /h/ or with open-mouth vowels. (Boone & McFarlane, 1994)
<table>
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<tr>
<th>Therapy methods</th>
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<th>Q 3 Effectiveness</th>
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5. **What outcome measures do you use in determining the success of the treatment method?** Please rank them from 1 to 5 (or 6 if you specify others).

(1 is the most commonly used outcome measure, followed by 2, 3, 4,.....)

Please put a "X" for those you never use.

( ) Acoustic measurement

( ) Aerodynamic measurement

( ) Videostroboscopic analysis/ Laryngoscopy

( ) Client report

( ) Perceptual voice evaluation

( ) Others please specify:____________________________

6. **How many session of therapy will you recommend? (excluding assessment session)**

Number of session: __________

7. **How long will each session of therapy last?**

________ minutes
Appendix 2

Personal information of Speech Therapist

a. Number of years of experience in assessing and treating patients with voice disorders: 
   ____ years

b. Average number of voice patient seen per day during the past twelve months: _____

c. Average total number of patients (voice plus any other disorders) seen per day during the past twelve months: ______

d. The ratio of voice disorder caseload of adult to child: ___% adult : ___% child

Name: ___________________________  Clinic: ___________________________

(You may leave this blank if you do not want to disclose your identity)

Where were you trained:

☐ Hong Kong 1
☐ Australia 2
☐ United Kingdom 3
☐ United States of American 4
☐ Others: please specify __________

Have you ever attended any short courses on voice therapy after graduation: ☐ Yes 1 ☐ No 2

If yes, how many courses have you attended? ______

What is/ are the course(s) about? ____________________________________________

Should you have any queries, please contact

Christine Lo (Yr. 4 student) at 98726224 or 77742293 or 29743359

Department of Speech and Hearing Science

The University of Hong Kong
Appendix 3

Personal information of Student Speech Therapist

Name: ________________

Name of Supervisor(s) while you had voice therapy practice in hospital in Year 3

__________________________

Should you have any queries, please contact

Christine Lo (Yr. 4 student) at 98726224 or 77742293 or 29743359

Department of Speech and Hearing Science

The University of Hong Kong