

Health-related Quality of Life as Studied by EORTC QLQ and Voice Handicap Index Among Various Patients With Laryngeal Disease

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Summary: Objectives. Patients with voice-related disorders are often treated by a multidisciplinary team including assessment by patient-reported outcome measures. The present paper aims at documenting the importance of including general health-related quality of life (HRQoL) measures to clinical investigations.

Study design. The participants (N = 80 larynx cancer, N = 32 recurrent palsy, N = 23 dysfunctional, N = 75 degenerative/inflammation, N = 19 various) were included consecutively at the laryngology clinic at Haukeland University Hospital. In addition, HRQoL data were included from one national group with laryngectomies (N = 105), one group with various patients formerly treated for head and neck squamous cell carcinoma (N = 96), and one population-based reference group (N = 1956).

Method. Obtained were the European Organization for Research and Treatment of Cancer Core Quality of Life Questionnaire (EORTC QLQ), the Voice Handicap Index (VHI), and the Eysenck Personality Inventory (EPI) neuroticism scores.

Results. By analysis of variance, we have determined significant dependence of groups analyzing the sum global QoL/health index ($F = 9.47$; $P < 0.001$), the functional HRQoL sum score ($F_{5,2373} = 7.14$, $P < 0.001$), and the symptom sum HRQoL scores ($F_{7,2381} = 8.13$; $P < 0.001$). In particular, patients with recurrent palsy and laryngeal cancer had lowered HRQoL. At the index levels, in particular dyspnea scores, were scored depending on larynx disease group ($F_{7,2288} = 24.4$; $P < 0.001$). The VHI score correlated with the EORTC H&N35 “speech” index with a common variance of 52%. VHI scores correlated with level of neuroticism with 8% common variance ($P < 0.001$) and EORTC scores with 22% ($P < 0.001$).

Conclusion. In particular, among patients with voice-related disease, those with recurrent palsy and laryngeal cancer had lower HRQoL. Furthermore, the HRQoL and VHI scores were inversely tied to neuroticism.

Key Words: EORTC QLQ–Voice Handicap Index–Norwegian–voice disorders–quality of life.

INTRODUCTION

Patients with voice-related disorders are often examined and treated by a team including an ear, nose, and throat specialist and a speech therapist. This requires registering clinical and patient-reported information as reliable and valid as possible. The European Laryngological Society has proposed a basis protocol for assessment of voice-related diseases,¹ which includes assessment by patient-reported outcome measures. Aims of this protocol include allowing comparison of treatments of voice-related diseases across cultures, as well as assessing impact of voice disorders in the health-related quality of life (HRQoL). This may include both general and symptom-specific HRQoL items.² The understanding of HRQoL among patients with larynx disease is, however, limited and should therefore be of high interest to investigate.

The European Organization for Research and Treatment of Cancer (EORTC) has developed a line of HRQoL questionnaires aimed at cancer patients.³ These HRQoL questionnaires

consist of one questionnaire developed as a general HRQoL questionnaire,³ as well as many site-specific questionnaires.⁴ The EORTC Core Quality of Life Questionnaire (QLQ)-C30 general questionnaire consists of nine multi-item scales, five functional scales, three symptom scales, one global health scale, and one global HRQoL scale. Several single-item symptom measures are also included. Although developed with an aim at evaluating the HRQoL of cancer patients, this questionnaire has also been suggested to be used to assess HRQoL in general.^{5,6} Norwegian population norms are also available.^{7,8} As patients with larynx disease include cancer patients, this questionnaire may be useful among mixed patients with larynx disease. An aim of this investigation is thus to study the EORTC QoL questionnaire yield among patients with larynx disease.

Several patient-reported outcome measures aimed at measuring the specific impact of voice-related diseases on activities of daily life have been developed.⁹ The Voice Handicap Index (VHI) constitutes one such example and includes questions measuring various perceived consequences of voice disease. The Agency for Healthcare Research and Quality reported in 2002 that the VHI met stringent criteria for reliability, validity, and availability of normative data.¹⁰ The VHI has been translated into many different languages. Verdonck-de Leeuw et al¹¹ have validated the VHI by assessing equivalence of European translations of the questionnaire to the following languages: German, French, Dutch, Italian, Portuguese, Belgian, and Swedish.¹¹ A Norwegian translation has also recently been published.¹² Several investigators have furthermore used VHI scores to study effects

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of larynx disease treatment.^{13–15} The VHI may be viewed as a voice-specific HRQoL instrument.¹⁶ One present aim was to study the relation between the VHI score and the various EORTC QLQ scores.

Studies investigating HRQoL in relation to psychosocial conditions among patients are an emerging interest in medicine, and such research show that especially personality is associated to HRQoL scores more closely than disease-derived factors.^{17–19} To study this further among patients with larynx disease has also been an aim of the present investigation.

The aims of this study were to investigate HRQoL among patients with voice disease and to study the relation between HRQoL and present neuroticism.

MATERIALS AND METHODS

Participants

This study consists of four cohorts:

I: Cohort of Haukeland University Hospital (HUH) patients with voice disease

The participants (N = 229) consisted of 138 men (median age 61, range 24–86) and 91 women (median age 51, range 18–79) and were included consecutively following appointments at the laryngology clinic at HUH. The clinic receives patients referred both from family physicians and from surrounding private practice ear, nose, and throat specialists. The patients received the questionnaires in an envelope at the consultation and returned the questionnaires by mail after filling out answers at home. The return rate of the questionnaires was 81%. The characteristics of these patients are given in Table 1.

II: General Norwegian reference

A randomly selected sample of 3000 people, reflecting the age and gender distribution of the adult Norwegian population, was

obtained by a random draw from the adult Norwegian population. Of the 3000 invited, 1956 returned the questionnaire and were available for analyses. The EORTC QLQ-C30 (version 2.0) and a questionnaire about demographic data and health were mailed. Detailed information about these reference HRQoL data has been published previously.^{7,8}

III: Cohort of patients from HUH formerly treated for head and neck squamous cell carcinoma (HNSCC)

This group included 96 successfully treated patients with HNSCC from western Norway aged less than 80 years who were primarily treated at HUH. HRQoL data were collected a median of 4 years after the primary diagnosis of HNSCC. The patients with HNSCC responded to the questionnaires by structured interviews. The patient, tumor, and therapy characteristics have been published previously.³

IV: Cohort of National Norwegian Laryngectomies (NLS)

All patients with laryngectomy in Norway become members of the NLS, a subsidiary of the Norwegian Cancer Society. Copies of EORTC QLQ-C30 (version 3.0) were mailed to all registered members of the NLS below 80 years of age. A second invitation was mailed if the patients did not respond to the first. In total, 104 patients answered the questionnaires, and the specific data have been published previously.²⁰ The vast majority of these patients were laryngectomized owing to cancer of the larynx.

Cohort I diagnostic workup

The patients were subjected to standard medical and voice therapist examination according to the standard procedure suggested by the European Laryngological Society.¹ The diagnostic groups were set according to previously published flowcharts²¹ (Table 1).

TABLE 1.
Number of Voice Patients Included, Age, Sex, Voice Use, Reported Degree of Voice Problems, Smoking, and Group Allocation, by Diagnosis (n = 229)

	Number		Age		Voice Use		Voice Problem		Smoking	Group Allocation
	Total	Female	Median	Range	Median %	Range %	Degree 0–1	Degree 2–3	Number	
Cancer	80	7	67	37–85	45	18–91	59	15	70	Cancer
Recurrent palsy	32	16	59	34–79	64	27–91	13	19	19	Recurrent palsy
Dysfunctional	23	15	55	29–77	82	18–100	12	11	6	Dysfunctional
Reinke edema	16	12	54	42–69	73	36–100	9	7	15	Degen./Inflam.
Laryngitis	16	9	73	40–86	55	27–91	10	6	9	Degen./Inflam.
Polyp	17	7	46	25–62	82	45–91	6	11	11	Degen./Inflam.
Cyst	12	6	50	20–71	68	9–91	8	3	4	Degen./Inflam.
Papilloma	8	3	39	21–54	77	64–82	4	4	2	Degen./Inflam.
Dysplasia	6	2	63	54–72	73	36–100	5	1	5	Degen./Inflam.
Other	12	8	58	21–81	45	36–100	6	6	8	Others
Nodules	6	5	29	18–43	100	55–100	1	4	1	Dysfunctional
Aphonia	1	0	56	56	57	57	0	1	0	Others
Total	229	90	59	21–86	64	9–100	133	88	150	

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