Original Article

An Evaluation of Speech Therapist Quality of Care at Oncology Hospitals

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Abstract

Introduction: Although speech pathology work becomes ever more representative of different perspectives, it has not implemented the routine of service quality evaluation. **Objective:** To evaluate the speech patology quality of care in oncology hospitals after defining parameters associated to it. **Materials and Methods:** The study is a survey of clinical and rehabilitation data in voice and/or swallowing treatment protocols and patients histories evaluated and submitted to speech therapy from 2000 to 2005. With the purpose of measuring the quality of care given to 551 selected patients, subjective parameters for evaluation of speech therapy rehabilitation were established. **Results:** The evolution of the patients voice and/or swallowing condition was classified from good to excellent in 62.7% of patients even so only 17.6% have received therapy discharge; 61.8% of the 374 patients who had abandoned treatment had a satisfactory evolution in rehabilitation. Factors like sex, age, marital status, staging, and tumor localization are predictive as regards rehabilitation adherence as well as the evolution of the condition. **Conclusion:** Results gave a measure of the speech therapy quality of care in oncology hospitals and indicated associated predictive factors.

Keywords: Rehabilitation. Speech therapy. Quality of care.

Introduction

The great expansion speech therapy has passed lately, evidenced by increasing work opportunities, made necessary more scientific studies for confirming the evolution of a profession still young in the history of Science. A very important area where there is an increasing clinical work and scientific production is the oncologic one, an answer to the increasing rate of cancer incidence in the last years, mainly in developing countries.[1] In the city of São Paulo, the work in this area was initiated in the 1970 decade by Antonio Amorim, who developed during 14 years a voluntary activity in the Hospital A. C. Camargo, in the area of rehabilitation for patients submitted to total laryngectomy.[2]

Speech therapist work in Oncology assisted initially the rehabilitation of patients treated for head and neck cancer, specifically in the rehabilitation of alaryngeal verbal communication. The work was later extended to rehabilitation of dysphonia and dysphagia after partial laryngectomies and surgeries in the oral cavity and pharynx and more recently sequels caused by organs preservation[2]. Speech therapist work has extended to other areas besides head and neck surgery as well as to other hospital settings, like semi-intensive care unit and infirmary; patients are referred to therapy by

many areas like pediatrics, neurological clinic, neurosurgery, abdominal and thoracic surgery, thus increasing multidisciplinary work.[3-6]

Despite the well-known growth and advance, we do not find references in the examined literature that describe the quality of care. There is no universal standard of good assistance in the health area.[7,8] Besides, speech therapy does not have regulatory parameters to evaluate the quality of care. Currently, due to research in quality of life, as well as the necessity of quality control (ISO 9001), medical departments have been searching for parameters for evaluating the quality of speech therapy services, both according to the therapists and the patients perspectives.

Adherence to treatment is the degree of patient following of therapeutical recommendations, being present to exams and obeying instructions recommended regarding behavior and/or diet. Adherence to treatment is a common phenomenon in the medical practice. It is estimated that only a third of the patients presents adequate adherence to treatments, be they therapeutical or preventive, and this accounts for the therapist having to evaluate if patients are following treatment the correct way and to observe which factors can be modified to help patients to adapt to the therapeutical process.[9]

Some authors point out some factors that come up to be determinant for adherence to treatment: age, to live alone or in institutions, low educational level and the increase of financial expenses.[10] The gravity of symptomatology can also be a factor that contributes for not adhering, intervening thus in treatment evolution.[11] Patients more reluctant are more frequently absent to exams and more problems in therapeutic control.[12]

One can obtain patients' contribution by means of encouragement and their own active participation in treatment.[13] Studies demonstrate that the professional has a role of total influence in adherence to treatment, for clarifying and dialoguing about the recommendations significantly increases adherence to treatment.[14,15] Patients with colorectal cancer presented a low adherence to post-cure follow-up and the ones that adhered had done this mainly because of the motivation demonstrated in the medical orientation and not because of symptoms recurrence.[16]

In speech therapy, important questions like beginning of treatment, time of treatment, percentages and reasons for absence to exams and abandonment, as well as their correlations, can give parameters important for evaluating the quality of care.

We believe that the presented aspects can assist us in measuring the quality of assistance given to cancer patients and thus help therapists to validate the quality of their procedures, making their treatment procedures ever more objective. The objective of this study was to evaluate the speech therapy quality of care assistance according to defined parameters of evaluation.

Method

The sample of the study was composed for individuals directed to the Department of Voice, Speech and Swallowing Rehabilitation at Hospital A.C. Camargo, for speech rehabilitation. The criteria of inclusion for this work were patients referred for rehabilitation, independently of sex and age, evaluated and submitted to speech therapy from 2000 to 2005. Patient were excluded that passed through evaluation, but not referred therapy, as well as patients referred for therapy that did not began the rehabilitation process.

Patients were identified from a survey on the archives of the Department of of Voice, Speech and Swallowing Rehabilitation . Once they were identified, a survey of their medical history was carried through to collect personal data, medical procedures carried through and aspects related to speech therapy.

Variables related to the evolution of the speech treatment were registered in the following way:

. Follow up of the condition: criteria pertinent to the clinical evolution of the patient were followed and a subjective comparison of clinical variables relative to the beginning and the end of the treatment was carried through.

. Dysphagia: to grade the evolution of patients with this diagnosis, two criteria of evaluation had been taken in consideration: data relative to the therapeutical evolution linked to diet progression, and videofluoroscopy (VF) findings, that had been graduated following the depth and aspiration level scale and the

Severity Scale Dysphagua.[17,18]

. Dysphonia: the criterion of evaluation was the one based on GRBAS Japanese global scale of dysphonia, that is carried through by means of a perceptual-auditory evaluation in the beginning and the ending of treatment.[19,20]

All estimative criteria for categorizing patients as regards the evolution took into consideration the gravity of symptomatology and the quality of life afforded to patients the end of treatment.

Interruption of ambulatory treatment: our group considered the case of patients who had interrupted treatment for reasons like tumoral relapses, general state failure and/or acute side effects from radiotherapy.

Interruption of speech therapy: the possible results of the treatment were discharge, abandonment at any time, abandonment during the process of discharge, suspension, follow-up, and death. Abandonment of treatment is defined as the situation when the patient does not return to therapy after 30 days from the date of the schedule appointment. Suspension of the treatment is defined as the situation where the therapist and the team decide to interrupt the treatment due to limitations in the prognosis.

Adherence to treatment: patients had been classified as adhering to treatment who had not had more than two consecutive absences without a previous justification and that had followed instructions like diet suspension or adequacy and modifications in style of life. Patients were characterized as not complying with therapy who had been absent two or more times without an explanation and/or who had stopped following speech therapist instructions, information reported by the patient herself or, most times, for family members. Other studies had used this concept to evaluate patients adherence, but in association with predefined protocols.[21,22]

To verify the association between categorical variables, the chi-square test was used. To compare time of treatment in its relation to groups, de Mann - Whitney non-parametric U test was applied to 2 categories and Kruskal - Wallis test to 3 or more categories. The level of significance of 5% was adopted in all statistical tests.

Results

The sample was composed by 335 (60.8%) male patients and 216 (39.2%) female patients, with a median age of 56 years. The most frequent educational status was elementary school (Table 1). As regards tumor characteristics, one could perceive that 74.7% presented a head and neck tumor and 55.5% an advanced stage tumor (Table 2).

We perceived that the medium time of speech therapy was 3 months, with a median of 6 sessions. The sample in its acceptable majority presented a low rate of absences. The most common result of therapy was the abandonment of the treatment. On the other hand, 62.7% of patients had an evolution of the condition from good to excellent (Table 3).

Table 1 – Distribution of casuistry according to demographic variables

Variable		N(%) measures
Sex	Male	335 (60,8)
	Female	216 (39,2)
Age (years)	Minimum-maximum	1-97
	Median	56
	Medium ± sd	54 ± 16,4
Educational level	Illiterate	41 (7.4)
	Elementary School	240 (43.7)
	High school	137 (24.9)
	Undergraduate	132 (24.0)
Marital status	Married	377 (68.8)
	Separated	89 (16.3)
	Widow/er	44 (8.0)
	Divorced	38 (6.9)
Children	Yes	416 (78.7)
	No	113 (21.3)

Table 2 – Distribution of casuistry according to the characteristics of primary tumor. Tumor localization and staging according to TNM (Wittekind and Sobin 2002)

Variable	Categories	N(%)
Local	HNC	412 (74.7)
	Other	139 (25.2)
Staging T	T1-T2	180 (40.4)
	T3-T4	247 (55.5)
	Tx	18 (4.0)
N(lymph nodes)	N0	279 (62.7)
	N+	115 (34.8)
	Nx	11 (2.5)
M(metastasis)	M0	429 (96.4)
	M1	3 (0.7)
	Mx	13 (3.0)

HNC = head and neck tumor

The rate of abandonment of the treatment did not present a significant statistical relationship with demographic characteristics, but presented a significant statistical relationship with the variable evolution of the condition: 53.3% of patient who abandoned treatment had speech condition classified as stable to bad, as opposed of 9.1% of patients released from rehabiltation. (p=0.001).

The correlation between the evolution of the voice and/or swallowing condition and demographic characteristics demonstrated that male individuals more than 19 years old, having children and with head and neck tumor presented a better evolution.

Table 3 – Rehabilitation characteristics of patients receiving speech therapy

Variable	N(%) / measures
Speech therapy time in months	
Minimum-maximum	1-66
Median	3
Médium ± sd	5 ± 6.6
Total sessions number	
Minimum-maximum	1-79
Median	6.5
Medium ± sd	11 ± 12.9
Sessions	
Minimum-maximum	0-20
Median	0.5
Medium ± sd	1 ± 1.3
Condition evolution	
From no evolution to bad	205 (37.3)
Good to excellent	345 (62.7)
Treatment Interruption	
Yes	125 (22.8)
No	424 (77.2)
End of treatment	
Abandonment	296 (53.7)
Abandonment during discharge process	78 (14.1)
Suspended	11 (2.1)
Discharge	97 (17.6)
Follow-up	44 (8.0)
Death and/or surgery	25 (4.5)
Treatment adherence	
Yes	325(59.1)
No	225(40.9)

Legend: N = total number of subjects sd = standard deviation

Patients with advanced tumors in the head and neck and advanced tumors were submitted to more speech therapy sessions (p < 0.05), male patients who presented advanced tumors and tumors in the head and neck had interrupted more frequently the phonoaudiological treatment (p< 0.05) and patients with primary tumors in the head

and neck region presented greater rates of adherence to treatment. Other data were not significant (Table 5, 6, and 7)

Table 4 – Correlation between the evolution of the condition and the sample demographic and surgical characteristics

Variable	Stable to bad N (%)	Good to excellent N (%)	p
Sex			
Female	85 (43.6)	110 (56.4)	0.063
Male	101 (35.2)	186 (64.8)	
Age			
< ou = 18y	15 (68.2)	7 (31.8)	0.010
19- 56y	90 (38.9)	141 (61.1)	
> 56y	81 (35.4)	148 (64.6)	
Educational level			
Iliterate	17 (47.2)	20 (52.8)	0.378
Elementary	74 (35.7)	133 (64.3)	
High school	45 (36.7)	78 (64.3)	
Undergraduate	50 (44.3)	64 (55.7)	
Marital status			
Married	36 (17.07)	53 (15.45)	0.526
Separated	140 (68.29)	237 (69.10)	
Widow/er	18 (8.78)	26 (7.58)	
Divorced	11 (5.37)	27 (7.87)	
Children			
Yes	137 (36.2)	241 (63.8)	0.044
No	49 (47.1)	55 (52.9)	
Staging			
T1-T2	61 (38.1)	99 (61.9)	0.947
T3-T4	91 (37.8)	135 (62.2)	
N(-)	98 (40.8)	142 (59.2)	0.017
N(+)	48 (32.6)	99 (67.4)	
Localization			
HNC	119 (34)	231 (66)	0.002
Other	59 (52.2)	54 (47.8)	
None	8 (42.1)	11 (57.9)	
Treatment			
Surgery	103 (40.5)	151 (59.5)	NA
Radiotherapy	5 (33.3)	10 (66.7)	
Surgery +Rxt	50 (35,7)	90 (64.3)	
Surgery +Ct	5 (38.5)	8 (61.5)	
Surg +Rxt +Ct	19 (38.8)	30 (61.2)	
Rxt+Ct	4 (36.4)	7 (63.6)	

Legend: Freq. = Frequency, HNC = Head and Neck Cancer, Rxt = Radiotherapy, CT= Chemotherapy, NA= Non-evaluable. p – Chi-square test obtained value

Discussion

Findings regarding characterization in our study are compatible with findings in literature[1], even so patients who died were not excluded from, a factor able to have increased the number

Table 5 – Association between demographical and treatment characteristics and speech therapy time in months

Variable	Therapy Time in Months			
	Min-Max	Median	Medium ± dp	p
Age				
< or = 18	1-14	2	4.1 ± 4.1	0.613
19-56	1-44	3	6 ± 7.6	
> 56	1-37	3	5.3 ± 6.4	
Sex				
Female	1-44	3	6.1 ± 7.4	0.155
Male	1-32	2	4,9 ± 6.1	
Educational level				
Illiterate	1-25	1.5	5,4 ± 6.5	0.017
Elementary	1-37	4	6.5 ± 7.4	
High school	1-44	2	5.2 ± 7.0	
Undergraduate	1-28	2	4.3 ± 5.6	
Marital status				
Married	1-28	3	5.9 ± 6.3	0.411
Separated	1-37	3	5.5 ± 6.8	
Widow/er	1-30	4	6.5 ± 7.4	
Divorced	1-44	3	5.7 ± 8.6	
Children				
Yes	1-44	3	5.3 ± 6.4	0.912*
No	1-37	3	5.8 ± 7.2	
Staging				
T1-T2	1-32	3	4.9 ± 5.8	0.122*
T3-T4	1-44	4	6.7 ± 8.1	
N(-)	1-44	3	5.6 ± 7.2	0.032*
N(+)	1-34	4	6.6 ± 7.3	
Location				
HNC	1-44	3	6.0 ± 7.1	0.005*
Other	1-30	2	4.5 ± 6.2	
Treatment				
Surgery	1-37	2	5.0 ± 6.4	0.377
Radiotherapy	1-22	3	5.4 ± 6.1	
Surgery +Rxt	1-44	4	6.3 ± 7.5	
Surgery +Ct	1-31	2	5.6 ± 8.3	
Surgery +Rxt +Ct	1-34	3	6.6 ± 7.4	
Rxt+Ct	1-23	2	5.2 ± 6.7	

Legend: Min-Max = minimum-maximum, = standard deviation, N(-) no lymph node N(+) lymph node HNC = Head and Neck Cancer, Rxt = Radiotherapy, CT= Chemotherapy, NA= Non-evaluable. p – value obtained by Kruskal – Wallis test *p – value obtained by Mann – Whitney U test

Table 6 – Association of demographic variables, tumor and treatment characteristics and treatment interruption

Variable	Interruption of Treatment		p
	Yes Freq.(%)	No Freq.(%)	
Sex			
Male	83 (29.1)	203 (70.9)	0.001
Female	30 (15.4)	165 (84.6)	
Age			
< or = 18	3 (13.6)	19 (86.4)	0.232
19-56	61 (26.5)	169 (73.5)	
> 56	49 (21.4)	180 (78.6)	
Educational level			
Illiterate	5 (13.9)	32 (86.1)	0.029
Elementary	62 (29.9)	145 (70.1)	
High school	23 (18.7)	100 (81.3)	
Undergraduate	23 (20.5)	90 (79.5)	
Marital status			
Married	14 (18.4)	62 (81.6)	0.327
Separated	77 (23.4)	252 (76.6)	
Widow/er	10 (25.6)	29 (74.4)	
Divorced	12 (34.3)	23 (65.7)	
Children			
No	22 (21.6)	80 (78.4)	0.547
Yes	88 (24.4)	272 (75.5)	
Staging			
T1-T2	43 (27.0)	116 (73.0)	0.946
T3-T4	58 (26.7)	159 (73.3)	
N0	54 (22.6)	185 (77.4)	0.021
N(+)	49 (33.4)	98 (66.6)	
Location			
HNC	95 (27.1)	256 (72.9)	0.002
Other	18 (13.8)	112 (86.15)	
Treatment			
Surgery	38 (15.0)	215 (85.0)	NA
Radiotherapy	5 (33.3)	10 (60.7)	
Surgery +Rxt	90 (35.7)	90 (64.3)	
Surgery +Ct	4 (30.8)	9 (69.2)	
Surgery +Rxt +Ct	14 (28.6)	35 (71.4)	
Rxt+Ct	2 (18,1)	9 (81,9)	

Legend: Min-Max = minimum-maximum, = standard deviation, N(-) no lymph node N(+) lymph node HNC = Head and Neck Cancer, Rxt = Radiotherapy, CT= Chemotherapy, NA= Non-evaluable.

of cases in advanced stages, which generally cause death in the first year of treatment.[23,24] Independently of tumor location or staging, all patients passed by a rehabilitation process aiming in most cases to promote functional adaptations and compensations, but not functions normalization.[25-27] One must also note that our casuistry consisted mostly of patients treated by the Department of Head and Neck Surgery.

As concerns the characteristics of the rehabilitation process, we find a median of 3 months of therapy, and 6.5 total sessions. Most

of the sample presented a low rate of absences during the treatment, with a median of 0.5. Of the 551 patients, 345 had an evolution of the condition from good to excellent.

As regards the end of therapy, 17.6% of patients had received rehabilitation discharge and 53.7% had abandoned treatment. Studies that evaluate adherence to treatment had already reported a high rate of treatment abandonment,[9,28] even though not in oncologic institutions.

Although a high rate of treatment abandonment has occurred, it was observed that

Table 7 – Association of demographic variables, tumor and treatment characteristics and treatment adherence

Variable	Adherence		
	Yes Freq.(%)	No Freq.(%)	p
Sex			
Female	111 (56,9)	84 (43.1)	0.350
Male	175 (38.8)	111 (38.8)	
Educational level			
Illiterate	18 (50.0)	18 (50.0)	0.037
Elementary	139 (66.7)	69 (33.3)	
High school	69 (56.1)	54 (43.9)	
Undergraduate	59 (51.8)	54 (48.2)	
Marital status			
Married	46 (60.5)	30 (39.5)	0.557
Separated	190 (57.8)	139 (42,2)	
Widow/er	25 (64.1)	14 (35.9)	
Divorced	25 (68.6)	12 (31,4)	
Children			
No	61 (58.6)	43 (41.4)	0.850
Yes	225 (59.7)	152 (40.3)	
Staging			
T1- T2	96 (60.0)	64 (40.0)	0.814
T3 -T4	127(58.8)	89 (41.2)	
N0	137 (57.0)	103 (43.0)	0.120
N(+)	95(65.1)	51 (34.9)	
Location			
HNC	219 (62.7)	130 (37.3)	0.056
Other	57 (50.4)	56 (49.6)	
None	10 (52.6)	9 (47.4)	
Treatment			
Surgery	151 (59.7)	102 (40.3)	NA
Radiotherapy	4 (26.7)	11 (73.3)	
Surgery +Rxt	88 (62.9)	52 (37.1)	
Surgery +Ct	4 (30.8)	9 (69.2)	
Surgery +Rxt +Ct	21(42.9)	28 (57,1)	
Rxt+Ct	5 (45.5)	6 (54.5)	

Legend: Freq. = Frequency, HNC = Head and Neck Cancer N(-) no lymph node N(+) lymph node, Rxt = Radiotherapy, CT= Chemotherapy, NA= Non-evaluable. *p* – Chi-square test obtained value

independently of the result (discharge or abandonment), almost all patients presented a clinic evolution from good to excellent. As rehabilitation in a oncology hospital normally involves the aim of functions maximization and not bring them back to normality, maybe speech and hearing therapists still have difficulties to perceive the limitations of rehabilitation, making longer the therapeutic process when it is no more necessary process, thus increasing the possibility of the patient abandoning treatment.

The evolution of speech rehabilitation presented a significant relation to age, tumor staging and location. A better evolution for patients more than 19 years old was observed,

something that can be understood as reflecting the fact that most patients less than 19 years old had, in this sample, tumors localized in the central nervous system, a factor that limits the evolution of the clinical condition and considerably increases the limitations of rehabilitation. Patients with sequels of head and neck tumors also presented a better evolution of the voice/swallowing condition, possibly because in oncology effects are more perceived and accepted and traditionally making doctors refer patients for rehabilitation.

Patients with children and higher educational level also presented a better evolution of their clinical condition. Other studies have already observed that the participation of patients' relatives on the process of treatment and rehabilitation promotes adherence to treatment and consequently better results.[12]

When therapy period was greater that the median (3 months) and the treatment was interrupted, the patients generally presented locally advanced tumors, justifying a more complex treatment (surgery + radiotherapy + chemotherapy) and thus prevented a better adherence and a good voice/swallowing evolution.[29,30]

Adherence to rehabilitation had a significant association to more education, a finding compatible with the literature, for patients with more access to information know more about their problems and generally adhere more to proposed treatments. There was a trend of patients with head and neck tumor to present higher percentages as regards adherence to treatment.

Despite the influence of factors able to interfere with the process of rehabilitation in an oncology hospital, a good voice/swallowing clinical evolution for most patients was observed.

Conclusion

Results allowed to perceive the speech therapy quality of the care in an oncology hospital and indicated that variables like sex, age, family, tumor staging and location are predictive factors for both adherence and evolution of rehabilitation.

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