

# Psychological profile of dysfunctional dysphonia

## *Il profilo psicologico del paziente affetto da disfonia disfunzionale*

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### Key words

Dysphonia • Dysfunctional dysphonia • Diagnosis • Mood disorders

### Parole chiave

Disfonia • Disfonia disfunzionale • Diagnosi • Disordini dell'umore

### Summary

A high degree of emotional maladjustment can be detected in dysfunctional dysphonia. In these patients, it is not rare to observe an immediate resolution of the phoniatric disorder, but it is equally as common to identify a significant rate of recurrence (> 10%) in the short and long term. This phenomenon may be due to poor adaptive ability in the presence of mood disorders. Aims of this study were: a. selection of a suitable instrument to identify "minor" and "major" symptoms of psychiatric nature in dysphonic subjects; b. evaluation of profile of mood disorders in dysfunctional dysphonic adults. Hopkins Symptom Check List 90 was chosen. This is a scale of self-evaluation, adapted in Italian, complete (9 dimensions) and easy to use. It is employed to evaluate the following dimensions: somatization, obsessive compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, sleep disorders. Three groups were studied: group 1: 40 patients (36 female, 4 male; aged 18-62 years, mean 42) with dysfunctional dysphonia; group 2: 20 patients (18 female, 2 male; aged 19-61 years, mean 43) with ENT disorders; group 3: 20 subjects (18 female, 2 male; aged 18-62 years, mean 42.2) as controls. In the statistical analysis, a one-way variance between the three groups and a post-hoc analysis using Schiffé test (level of significance 0.05) were carried out. Results showed significant differences between group 1 and groups 2 and 3 as far as concerns anxiety, phobia, obsessive-compulsive, interpersonal sensitivity and somatization variables. A significant difference was found only between groups 1 and 3 as far as concerns the variables: sleep disorders, depression and paranoid ideation. No significant difference emerged between the groups regarding psychoticism and anger/hostility dimensions. The present study identified a definite profile of minor personality disorders, of an anxious nature, with evidence of somatization, interpersonal sensitivity and obsessive-compulsive type traits, significantly prevailing in dysfunctional dysphonic subjects. Symptom Check List-90 has, therefore, proven to be an adequate instrument in the more complete definition of subjects affected by dysfunctional dysphonia aiming at referral to an integrated protocol which focuses on phoniatric treatment using an approach which acts upon the behavioural aspects of communication.

### Riassunto

*Un elevato grado di disadattamento emozionale può essere rilevato nella disfonia disfunzionale. In questi pazienti non è raro osservare una risoluzione del disturbo foniatrico, ma è altrettanto comune identificare un significativo tasso di recidiva (> 10%) a breve e lungo termine. Questo fenomeno può essere ascritto a scarse abilità adattive in presenza di disturbi dell'umore. Scopi del seguente studio sono: la selezione di uno strumento valutativo capace di identificare sintomi "minori" e "maggiori" di natura psichiatrica in soggetti disfonici; la valutazione del profilo dei disordini dell'umore in pazienti adulti affetti da disfonia disfunzionale. La nostra scelta è caduta sull'Hopkins Symptom Check List 90-SCL-90, che è una scala di autovalutazione, adattata in lingua italiana, completa (9 dimensioni) e facile da usare. La SCL-90 valuta le seguenti dimensioni: somatizzazione, ossessività, sensibilità interpersonale, depressione, ansia, ostilità, ansia fobica, ideazione paranoide, psicoticismo, disordini del sonno. Sono stati presi in considerazione tre gruppi di soggetti: gruppo 1 = 40 pazienti (36 femmine, 4 maschi; età 18-62 aa., media 42 aa.) con disfonia disfunzionale; gruppo 2 = 20 pazienti (18 femmine, 2 maschi; età 19-61 aa., media 43 aa.) con patologie ORL; gruppo 3 = 20 pazienti (18 femmine, 2 maschi; età 18-62 aa., media 42,2 aa.) come controlli. Sono state effettuate una analisi statistica della varianza ad una via tra i tre gruppi e una post-hoc analisi con il test di Schiffé (livello di significatività 0,05). Sono emerse differenze significative tra il gruppo 1 e i gruppi 2 e 3 in merito alle variabili ansia, fobia, ossessività, sensibilità interpersonale e somatizzazione. È stata rilevata una differenza significativa esclusivamente tra il gruppo 1 e il gruppo 3 per quanto riguarda le variabili disordini del sonno, depressione e ideazione paranoide. Non sono risultate significative le differenze tra i gruppi riguardo alle dimensioni psicoticismo e ostilità. Lo studio ha identificato un profilo definito di disordini minori della personalità di natura ansiosa con note di somatizzazione, sensibilità interpersonale, ossessività, che sono risultate prevalenti nei soggetti affetti da disfonia disfunzionale. L'SCL-90 si è pertanto dimostrato strumento adeguato per una più completa definizione del soggetto affetto da disfonia disfunzionale allo scopo di applicare un protocollo di trattamento atto ad integrare le tecniche foniatriche con un approccio mirato agli aspetti più globali e comportamentali della comunicazione.*

## Introduction

Qualitative and quantitative alterations of the voice, in the absence of primary structural modifications of the larynx, are defined as dysfunctional dysphonia<sup>1</sup>. Originally, only 4 categories were recognised<sup>2,3</sup>:

- psychogenic dysphonia (or conversion disorder);
- spasmodic dysphonia;
- falsetto voice;
- dysphonia caused by muscular tension.

Dysfunctional dysphonia is defined, in accordance with the recent outline of voice pathologies<sup>4,5</sup>, as muscular-tension and classified into primary forms (resulting from fatigue, overuse, difficulty in discrimination of tone, imitation of vocal models) and secondary psychogenic forms (caused by conversion disorders, voice disorders, depression) or organic (caused by compensation, audiogenic).

There was a very clear distinction between dysphonia of an organic nature and loss of voice due to "hysterical" manifestations, at the beginning of the last century<sup>6,7</sup>: functional disorders were made to coincide with forms of frankly psychiatric conversion.

In reality, psychiatric symptoms, such as manifestations due to conversion disorders, major depression, agoraphobia and post-traumatic stress disorder were very rarely identified. Mood disorders, represented mainly by anxiety and states of tension, preceding and not secondary to dysphonia, were more frequently identified in dysfunctional dysphonia<sup>2,8</sup>.

It is interesting to recall how Le Huche and Allen<sup>9</sup> when speaking about "disorders of the vocal gesture" and of "vicious circle of the vocal effort" introduced the concept of "feelings of inefficiency" with regards to voice as the starting point of the pathological and individual cascade in effort, the element able to self-maintain the dysfunction until there are organic results. The French Authors purposely places "emotional factors", "social/professional obligations of speech or singing" and "emotional and behavioural typology" in a prominent position among the triggering and predisposing factors.

Relatively recent research confirms an increase in the degree of emotional maladjustment with prevalent hypochondriacal, psychoasthenical and anxious-tension aspects, in these subjects<sup>10</sup>. In other words, a "psychiatric" component must be considered in dysfunctional dysphonia, but it does not cause evident personality disorders, in most cases. Therefore, it is not uncommon to identify voice disorders which do not deserve the psychiatric tag of conversion symptoms and, on the other hand, which do not demonstrate a primarily organic origin in clinical practices; it is a rather incorrect use of the phonatory technique which provokes perceptible alterations in the vocal product, able to result, in turn, in organic lesions of the phonation apparatus, in these cases. Many techniques oriented towards differ-

ent parameters, which guarantee a euphonic vocal emission have been elaborated and proposed.

It is not rare to observe an immediate resolution of the phonatoric disorder, but it is just as common to identify a significant rate of recurrence (>10%) in the short and long term<sup>11</sup>. This phenomenon can be interpreted in terms of persistence of scarce adaptive ability, which represents a trait of vulnerability and predisposes to recurrence<sup>10</sup>.

Attention must be focused on approach, management, prognosis and follow-up of the subject presenting dysfunctional dysphonia, independently of the interpretative key. As far as concerns the first point, if a profile of a significantly higher level of mood disorders with respect to tests is confirmed, then evaluation of the dysphonic patient cannot be considered complete in the absence of a valid instrument able to describe the psychiatric symptoms. With regard to the second point, the above-mentioned instrument can contribute to a rational orientation of therapeutic choices by balancing the aspects related to the vocal technique with those assigned to the management of interior conflicts and interpersonal relations<sup>11</sup>. Furthermore, prognosis, in the case of identification of a mood disorder, is characterised by a higher tendency to recurrence and requires long-term periodic examinations.

Aims of this study are, therefore:

- selection of an evaluative instrument able to identify "minor" and "major" symptoms, of a psychiatric nature, in dysphonic subjects;
- evaluation of the profile of mood disorders in dysfunctional dysphonic adults.

## Method

Hopkins Symptom Check List 90 (SCL-90)<sup>12</sup> was chosen since it represents a scale of self-evaluation which is adapted in Italian, it is complete and, at the same time, easy to use.

SCL-90 is a scale of self-evaluation of psychiatric symptoms set out in 90 items, corresponding to 9 symptom constructs:

- I Somatization;
- II Obsessive-compulsive;
- III Interpersonal sensitivity;
- IV Depression;
- V Anxiety;
- VI Hostility;
- VII Phobic anxiety;
- VIII Paranoid ideation;
- IX Psychoticism.

### I. SOMATIZATION (12 ITEMS)

This dimension comprises items reflecting distress arising from perceptions of bodily dysfunction related to the cardiovascular, gastrointestinal, respiratory

and other systems with strong autonomic mediation.

## II. OBSESSIVE-COMPULSIVE (10 ITEMS)

The items forming the basis for this dimension reflect behaviours that are closely identified with the clinical syndrome of this name. The items are focused on thoughts, impulses and actions that are experienced as irresistible compulsion of an ego-alien nature. Behaviours indicative of a more general cognitive difficulty also fall into this dimension.

## III. INTERPERSONAL SENSITIVITY (9 ITEMS)

This dimension includes items related to feelings of personal inadequacy and inferiority in comparison with other individuals. The characteristics are feelings of uneasiness and marked discomfort during interpersonal interactions in addition to negative expectancies regarding interpersonal communications.

## IV. DEPRESSION (13 ITEMS)

This dimension reveals disorders characterised by lack of motivation, loss of vital energy, feelings of futility and hopelessness as well as somatic and cognitive correlates of depression, up to the extreme situation of suicidal intentions.

## V. ANXIETY (10 ITEMS)

General indicators, such as restlessness, nervousness and tension are included in this dimension, in addition to somatic signs.

## VI. HOSTILITY (6 ITEMS)

The present dimension is revolved around three categories of hostile behaviour: thoughts, feelings and actions of a hostile or frankly violent nature.

## VII. PHOBIC ANXIETY (AGORAPHOBIA) (7 ITEMS)

This dimension includes scales that reflect fears of a phobic nature oriented towards travel, open spaces, crowds and social or public circumstances.

## VIII. PARANOID IDEATION (6 ITEMS)

The items have been developed based on the primary characteristics of paranoid thought which is centred on feelings of hostility, suspicion, centrality, delusion, loss of autonomy and grandiosity.

## IX. PSYCHOTICISM (10 ITEMS)

The items include the first-rank symptoms of schizophrenia (auditory hallucinations, thought broadcasting, external thought control, external thought insertion) including signs of behaviour indicated as schizoid life-style.

A further 7 items regarding eating and sleep disorders have been added.

Each item is evaluated in accordance with a semi-quantitative scale of five points:

- not at all 0
- a little bit 1
- moderately 2
- quite a lot 3
- extremely 4

The test is given to the patient and he/she must complete it by him/herself without any interference from either his/her doctor or family and friends.

## STUDY POPULATION

Three groups of individuals were taken into consideration as far as concerns evaluation of the prevalence of adults affected by dysfunctional dysphonia:

- group 1: 40 patients (36 female, 4 male, age range 18-62 years, mean 42) presenting dysfunctional dysphonia;
- group 2: 20 patients (18 female, 2 male, age range 19-61 years, mean 43) with ENT disorders (sinusitis, pharyngitis, tonsillitis);
- group 3: 20 non-dysphonic subjects (18 female, 2 male, age range 18-62 years, mean 42.2) with no active disease.

Group 1 patients presented:

- rough voice 38/40 (95%)
- vocal fatigue/effort 40/40 (100%)
- reduction of phonatory time 40/40 (100%)
- hard attack 32/40 (80%)

Fibroscope revealed:

- nodules 9/40 (22.5%)
- oedema 6/40 (15%)
- tensorial-adduction alterations 20/40 (50%):
  - overall hypercontraction;
  - false cord hypercontraction;
  - incomplete adduction;
  - posterior hyperadduction.

Even those presenting nodules and oedema were correctly considered as dysfunctional on account of the misuse/abuse at the origin of lesions.

The voice disorders had begun:

- <6 months previously in 7%;
- between 6 months and 1 year previously in 31%;
- >1 year previously in 62%.

Patients presenting primarily organic diseases of the vocal cords (cysts, paralysis, acute laryngitis, laryngo-pharyngitis caused by gastro-oesophageal reflux, partial removal of larynx) were excluded.

In 75% of cases, the voice disorders had a fluctuating trend in recurring episodes. Dysphonia was constantly present in the remaining 25%.

All subjects from the three groups compiled the SCL-90.

## Statistic analysis

One-way analysis of a variance (ANOVA) between the three groups and a post-hoc analysis using the Schiffo test (level of significance 0.05) were carried out.

## Results

The epidemiological data emerging from other studies<sup>18,13</sup>, with a prevalence of female subjects affected by dysfunctional dysphonia, were confirmed.

The results and the statistical analysis are shown in Table I.

The differences between group 1 and groups 2 and 3 with regard to the variable *anxiety* were quite significant.

Significant differences were also found between group 1 and the other 2 groups with regard to the variable *phobia* and the same observations are valid for the *obsessive-compulsive* variable.

Differences between group 1 and groups 2 and 3, as far as concerns *interpersonal sensitivity*, are also statistically significant.

Even the *somatization* variable from the comparison of the averages obtained in the three groups shows a significant difference between group 1 and groups 2 and 3.

There is a significant difference only between the

first and the third group as far as concerns the *depression* variable.

There is also a significant difference between group 1 and group 3 with regard to *sleep disorders* and the same is also true for the *paranoid ideation* variable. Instead, no significant differences emerged between the groups as far as concerns the *psychoticism* dimension.

The mean results regarding the *anger/hostility* dimension were within low normal limits and there were no significant differences between the three groups.

## Discussion

Already in the 1960's several researchers, despite the lack of valid investigative instruments, had identified, among patients affected by functional dysphonia, the prevalence of personality traits represented by neuroses, caused by anxiety, depression and introversion<sup>8,14</sup>. The Authors maintained that the dyspho-

Table I.

	Group 1		Group 2		Group 3	
	Mean	SD	Mean	SD	Mean	SD
Somatization	1.03*	0.50	0.42	0.39	0.23	0.27
Obsessive-compulsive	1.07*	0.43	0.49	0.33	0.35	0.39
Interpersonal sensitivity	0.46*	0.36	0.26	0.14	0.20	0.19
Depression	0.70	0.39	0.46	0.39	0.22	0.24
Anxiety	1.56*	0.72	0.53	0.60	0.36	0.37
Hostility*	0.41	0.40	0.20	0.25	0.20	0.22
Phobia	0.21*	0.22	0.08	0.14	0.02	0.08
Paranoid ideation	0.77	0.41	0.57	0.31	0.41	0.30
Psychoticism*	0.11	0.17	0.04	0.06	0.02	0.05
Sleep disorders	1.27	0.80	0.86	0.57	0.43	0.44

\*: significant difference.

Table II. Statistic analysis of results

Somatization	F = 27.65	p < 0.001	Group 1 > 2; Group 1 > 3
Obsessive-compulsive	F = 26.38	p < 0.001	Group 1 > 2; Group 1 > 3
Interpersonal sensitivity	F = 6.50	p < 0.005	Group 1 > 2; Group 1 > 3
Depression	F = 12.27	p < 0.001	Group 1 > 3
Anxiety	F = 32.17	p < 0.001	Group 1 > 2; Group 1 > 3
Hostility	F = 3.89	p < 0.05	post hoc NS
Phobia	F = 8.18	p < 0.005	Group 1 > 2; Group 1 > 3
Paranoid ideation	F = 6.50	p < 0.005	Group 1 > 3
Psychoticism	F = 3.75	p < 0.05	post hoc NS
Sleep disorders	F = 10.49	p < 0.001	Group 1 > 3

nia could be triggered by an infective episode of the respiratory tract<sup>15,16</sup> acting as a “physical trigger”.

In fact, a high level of negative affectation (anxiety, minor depression, emotional stress, etc.) leads to exaggerating of the symptoms perceived and the significance of the same. Therefore, a feed-forward process is triggered in which the presence of a symptom is prolonged by the cognitive, emotional and physical reactions it evokes.

On the other hand, it is possible that the triggering factor is represented by stressful events that if combined with infective problems, complicate the situation.

Introducing the concept of a psychiatric symptomatological profile with regards to dysfunctional dysphonia, therefore, requires adequate nosological collocation in the evolution of information both in the psychiatric dimension and in the phoniatic-logopedic dimension.

Even if it is true that we spoke of vocal production at the beginning of the last Century, the boundaries between primarily organic forms, dysfunctional manifestations and psychogenic forms remain vague.

Not even the very recent attempt by Rosen et al.<sup>4</sup> to organise the subject contributes to a definite classification. The reason is probably due to the perpetuation of taxonomic reference models, which are focused too intensely on the concept of illness and are too rigid to be adapted to complex multifactor phenomena like human verbal-phonatory communications.

In order to make the diagnostic process and, consequently, that of re-habilitation really “efficient”, we should, maybe, take courage and revise the outline, in order to reach an acceptable compromise between a system of large numbers and a niche suitable for every single case. With a flight, which we hope is not excessively “pindaric”, there is no doubt that as far as concerns voice pathology, an evolution is needed like that recorded in industrialised societies for mass production.

We have gone from an artisan-creation of products, for a few individuals, to industrialisation which supplies the goods available to “Many”, but they are packaged.

Sometimes, by observing the way in which the diagnosis and the re-habilitation of patients affected by dysphonia and particularly of patients affected by dysfunctional dysphonia have been established, we get the impression that “off the peg” clothes have been supplied to which buyers must adapt themselves.

The widespread “customer satisfaction” concept to the world of health-care and the change in the definition of patient (he who suffers) to that of client (he who buys the goods) requires an adaptation which is not formal, but is substantial in the diagnostic phase. On the other hand, we must bear in mind that goods

which are made to measure and in answer to the needs of the buyer should be of artisan-creation, and, consequently, would go beyond the financial means of “Many” on account of the high costs.

In the same way as economy and industry are making efforts to reconcile what is irreconcilable, that is to say, the industrialised and customised production of answers, then the health-care world and, in this specific case, the operators “dedicated” to voice pathologies must try to adapt the benefits of the traditional nosographic outline<sup>5</sup> to the needs of the individual affected by dysphonia.

In order to make the concept more explicit, we could say that the operation to be carried out is not that of trying to place the single “clinical case” in the nosographic box to which it might be most adapted to: “non-organic voice problems” instead of “organic”, i.e., dysfunctional dysphonia caused by tension, conversion disorders, psychogenic disorders or organic dysfunctional dysphonia.

Maybe, it is better to define voice pathology as the result of the continuum related to at least three components:

- organic manifestations;
- vocal malfunctioning;
- psychiatric symptomatology with the aim of identifying the value of each in the balance of the disorder, if possible, the generative relation between cause and effect.

It is comprehension of the latter which constitutes the difficult, yet precious, element upon which rational and efficient treatment must be founded.

It is established that the role of each of the three main components “measured” from time to time is not established through “experience”, “tradition” or “ideology”, therefore specific instruments of evaluation are necessary.

As far as concerns the third aspect, there is little interest due to the misunderstanding that the psychiatric profile would be of value only in the obviously psychogenic form. Experience has shown us, instead, that knowing the psychiatric symptomatological profile is useful in every interactive situation, and in particular, communication disorders. Therefore, the need is felt for evaluative instruments, even for the “psychological” aspects, the simplification of which into the two classic prototypes of hyperactive/hypokinetic seems too stereotyped<sup>9</sup>.

It is necessary to point out that we are not referring to the so-called psychological impact of the “vocal problem”, which has already been synthetically monitored by one of the three sections of the Voice Handicap Index<sup>17</sup> and of its adaptation in Italian<sup>18,19</sup>. Mostly, it is a problem of creating an essential symptomatological profile which is complete as far as concerns major and minor psychiatric symptoms which could be placed in one of the possible ae-

tiopathogenetic relations: they could be, in fact, cause/co-cause, be part of the symptomatological line or result as the consequence of any voice disorder.

The present evaluation of the psychiatric symptoms carried out with the SCL-90<sup>12</sup> has confirmed that most of the subjects affected by dysfunctional dysphonia, are affected by mood disorders which are of an emotional, not psychotic, nature.

Contrary to the research conducted by White et al.<sup>1</sup>, the present study has identified a definite and significantly homogenous profile of minor personality disorders, as previously referred to by Gerritsma<sup>20</sup>.

In fact, disorders of an anxious nature, with notes of somatization, interpersonal sensitivity and obsessive-compulsive type traits, significantly prevailed among the dysphonic subjects. The absence of symptoms related to hostility, phobic anxiety, paranoid ideation and psychoticism is considered for the placement in the second or third step of the phoniatic intervention. In other words, the filter of general medicine and out-patient specialization could have directly addressed the psychiatric components of the subject affected by such disorders.

Therefore, the sensitivity of the dysphonic symptom as far as concerns mood disorders, faced with a little representation of frankly psychiatric pathologies, is confirmed.

The SCL-90 has, therefore, proven to be an adequate instrument in the more complete definition of the subject affected by functional dysphonia.

Several reasons have led to the suggestion of the diagnostic setting of the dysphonic patient, both in the case of disorders of a dysfunctional nature with the presence of lesions, in which we use the following flow-chart:

- existence/entity of psychiatric symptoms in the dysphonic patient at the beginning of treatment;
- ↓
- the differentiation between mood disorders and

disorders which must be immediately and necessarily referred to the psychiatric components (ex: paranoid ideation, major depression, psychosis and phobic anxiety) in the presence of a significant psychiatric profile;

↓

- for the mood disorders referred to an integrated protocol which foresees phoniatic work on the harmonised vocal technique with an approach able to act on the behavioural aspects of communication;

↓

- programming a long-term follow-up for subjects with positive profiles;

↓

- referral to psychiatric treatment for subjects who do not respond to treatment or who have short-term recurrences (within three months of treatment).

In the light of these factors, the need emerges for a more specific preparation of treatment protocols destined for subjects affected by functional dysphonia. We must bear in mind the customer centrality with respect to the operator and the interventions and the ecological concept of the intervention are as valid in the dimension of the functional voice pathology as they are in general rehabilitation. It is not by chance that many patients declare that they are subjectively dissatisfied with the technical approaches which are substantially beyond their experience and, on the other hand, they do not feel they are in a condition to go immediately to a specialist in psychology or psychiatry<sup>21</sup>.

The only way to overcome this problem is, on the one hand, to have a "simple" definition of the psychiatric profile of the subject at our disposal and, on the other, to be able to offer strategies and instruments which are not limited to the aspects of relaxation, but refer to the specific difficulties of the patient.

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