

Relations between vocal self-perception and psyche in a group of male adolescents undergoing physiological voice change

Relações entre autopercepção vocal e psiquismo em um grupo de adolescentes do sexo masculino na muda vocal

Relaciones entre autopercepción vocal y psiquismo en un grupo de adolescentes del sexo masculino en la muda vocal

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Abstract

Purpose: To analyze the relation between vocal self-perception and psyche in a group of male adolescents undergoing voice change. **Method:** Qualitative study involving six teenagers aged between 13 years and 5 months and 14 years and 11 months undergoing voice changes, 8th grade students of a public school in São Paulo. The procedures were: perceptive auditory vocal assessment, completion of the Descriptive Terms for Voice (TDV) to describe the subjects' perception of their voices before and after the intervention group and a description of the focus group that addressed the following issues: adolescence and pubertal changes, process of vocal changes and their impact on body image and identity reverberations (organic, subjective and social) arising from adolescence. The data were analyzed through

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LLD: conception and development of the research project, data collection and interpretation, devised the intellectual content.

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categorization of meanings that were considered relevant for the purpose of this study. **Results:** There were predominant feelings of estrangement / discomfort concerning the experience of adolescence, generated by new affective and behavioral demands. The subjects reported difficulties in adapting to body changes, especially changes in vocal quality and its negative impact on their conversation partners. The results of the TDV show that the psychosocial aspects of this impact are predominant. The negative vocal attributes increased after intervention. **Conclusion:** The results show that changes in the adolescents' vocal pattern reverberate in their psychic functioning and generate impact in the vocal self-perception, thus reaffirming the biopsychic character that is inherent to the human voice.

Keywords: Adolescence; Voice; Self-perception; Speech, language and hearing sciences; Psychology

Resumo

Objetivo: Analisar as relações entre autopercepção vocal e psiquismo em um grupo de adolescentes do sexo masculino na muda vocal. **Método:** Estudo qualitativo em que participaram seis adolescentes com idades entre 13 anos e 5 meses e 14 anos e 11 meses na fase de muda vocal, que frequentavam a 8ª série do ensino fundamental de uma escola da rede pública na cidade de São Paulo. Os procedimentos foram: avaliação perceptivo auditiva da voz, aplicação do instrumento Termos Descritivos para a Voz (TDV) para descrever a percepção dos sujeitos em relação à voz, antes e após intervenção grupal e descrição do grupo focal que abordou os seguintes temas: adolescência e mudanças pubertárias, processo de muda vocal e suas repercussões na imagem corporal e reverberações identitárias (orgânicas, subjetivas e sociais) decorrentes da adolescência. A análise do material consistiu na categorização de núcleos de sentido cujas ocorrências foram consideradas relevantes para o objetivo da pesquisa. **Resultados:** Predominaram sensações de estranhamento/incômodo sobre a vivência do adolescer, geradas pelas novas demandas afetivas e comportamentais. Os sujeitos relataram dificuldades de adaptação às mudanças corporais, salientando as alterações na qualidade vocal e seu impacto negativo nos interlocutores. Nos resultados do TDV predominam os aspectos psicossociais relativos a esse impacto. Os atributos vocais negativos aumentaram na aplicação pós-intervenção. **Conclusão:** Os resultados evidenciam que as mudanças no padrão da voz dos adolescentes pesquisados reverberam em seu funcionamento psíquico e geram impacto na autopercepção vocal dos mesmos, reafirmando assim o caráter biopsíquico inerente à voz humana.

Palavras-chave: Adolescente; Voz; Autopercepção; Fonoaudiologia; Psicologia

Resumen

Objetivo: Analizar las relaciones entre autopercepción vocal y psiquismo en un grupo de adolescentes del sexo masculino en la muda vocal. **Método:** Estudio cualitativo con seis adolescentes con edades entre 13 años y 5 meses y 14 años y 11 meses en la fase de muda vocal, que cursaban el 8º año de la enseñanza fundamental de una escuela de la red pública en São Paulo. Los procedimientos fueron: evaluación perceptivo auditiva de la voz, aplicación del instrumento Términos Descriptivos para a Voz (TDV) para describir la percepción de los sujetos con relación a la voz, antes y después de intervención grupal y descripción del grupo focal que trató de los temas: adolescencia y cambio en la pubertad, proceso de muda vocal y sus repercusiones en la imagen corporal y reverberaciones de identidad (orgánicas, subjetivas y sociales) de la adolescencia. El análisis del material se consistió en la categorización de núcleos de sentido cuyas incidencias fueron consideradas relevantes para el objetivo de la investigación. **Resultados:** Fueran predominantes las sensaciones de extrañeza/incómodo con la vivencia adolescente, generadas por las nuevas demandas afectivas y comportamentales. Los sujetos relataran dificultades de adaptación a los cambios corporales, destacando las alteraciones en la calidad vocal y su impacto negativo sobre los interlocutores. En los resultados del TDV predominaron los aspectos psicossociales concernientes a ese impacto. Los atributos vocales negativos aumentaron en la aplicación pos-intervención. **Conclusión:** Los resultados evidencian que los cambios en el padrón de voz de los adolescentes reverberan en su funcionamiento psíquico y generan impacto en su autopercepción vocal, reafirmando así el carácter biopsíquico inherente a la voz humana.

Palabras claves: Adolescente; Voz, Autopercepción; Fonoaudiología; Psicología

Introduction

This study is inscribed in the intersection field between Speech-Language Pathology and Audiology and Psychoanalysis, focusing on the process of the changes in vocal patterns during adolescence and on the psyche dynamics throughout this process. In this perspective, the symbolic role of the voice on the subject's history is emphasized.

During puberty, there are several body and hormonal changes. In males, the most evident changes are the growth of body hair, an increase in physical stature and muscle mass, the occurrence of acne and the penis' first ejaculation¹.

During this period there are also changes in glottal configuration that are reflected on vocal characteristics such as the change in angle of the thyroid cartilage, which decreases the tension of the thyroarythenoid muscle, relaxing the mucosa. This process causes significant voice changes, especially the decrease in fundamental frequency that may lead to voice breaks. Therefore, these transformations of the vocal tract can be perceived through hearing and are considered parameters of sexual differentiation².

This natural phenomenon is called physiological voice change or mutation and, albeit occurring for both genders, it is more evident in males, and starts between 13 and 15 years of age. It may last from three to six months but, in some cases, may endure for up to one year. In other cases, this process may not be completed, and may thus be called incomplete voice change and may call for clinical intervention³.

Studies show that the main laryngeal changes during this phase are: increase in the antero-posterior diameter, or length, width and thickness of the vocal folds due to the change in the thyroid cartilage angle; in addition to the change in larynx position (lower) considering the cervical spine. At the same time, the resonance spaces and the thorax are developing. This leads to an increase of lung size as well as of respiratory⁴. During the process of vocal change there are deviations in fundamental frequency and changes in vocal quality. At the end of this process the voice becomes up to an octave and a half lower, thus acquiring typical male characteristics^{2,3}.

In this context, the teenager must come to terms with a transformed body image, which tends to cause strangeness and promote subjective

repercussions that will be approached through conceptual mediations with Psychoanalysis, regarding the intersection between body and psychism⁵. Vocal change is typical of this life period, since the action of new hormone levels transforms the child's larynx into an adult one, generating voice changes. This process requires the adolescent to deal with the effects of voice change in the interactions with his interlocutors².

Studies in the field of Speech-Language Pathology and Audiology^{6,7,8,9,10,11} regard several aspects related to physiological voice change, such as: vocal self-perception, intervention proposals regarding vocal care measures, physiological and psychological aspects of incomplete vocal change, perceptive-auditory and acoustic voice assessments, the impact of voice change on structural vocal fold lesions and memories regarding the period of voice change.

In a study aiming to analyze vocal self-perception, the authors studied 80 teenagers of both genders in the city of São Paulo. They used for this purpose, a protocol with multiple choice questions on the following themes: self-knowledge, self-perception and self-image regarding the voice, most frequent vocal habits and self-perception regarding the effects of the voice on communication. There was a Strong relationship between the perception/opinion about the voice, age group and gender, with a lower impact for females when compared to males. It was also observed that the older the age group, more positive opinions on their own voices were observed⁹.

Another study aiming to understand the impact of vocal change analyzed 400 adult male individuals who were asked about their memories regarding this process. Most of them (78.8%) remembered mostly negative feelings⁶.

There was another research that aimed to describe the online answers of teenagers on a website about voice. It verified that 75.8% of the subjects reported positive attributes to their own voices but males significantly reported more negative attributes to their voices, related to vocal instability and frequency breaks, deriving from the physiological voice change process⁷.

Overall, it may be observed that researches show that the voice change process affects/alters vocal self-perception, in addition to negatively interfering on communication with others^{7,9}.

Therefore, knowing the perceptions of adolescents regarding the subjective contents that are involved in the process of becoming an adolescent may contribute towards interventions that will promote sensible actions that are in context for this specific population. In the present study, the notions of body and psyche are intertwined and, thus, anchor the relations between subject and language while privileging, in the later, the inalienable dimension of the voice¹².

Based on these considerations, the purpose of this study is to analyze the relations between vocal self-perception and psyche in a group of male adolescents undergoing the physiological voice change process.

Method

This is a quantitative and qualitative research, conducted in observance of the Regulatory Guidelines and Norms for research involving human beings of the National Research Ethics Committee (CONEP/1996). The research Project was approved by the Research Ethics Committee (CEP) under protocol number CAAE: 18964613.6.0000.5482.

1. Casuistics

Six male adolescents aged between 13.5 and 14.11 years, 8th grade students at a State Middle School of the city of São Paulo. This was a convenience sample obtained from the group of 8th grade

students who were in an age group compatible with the period of physiological voice change.

2. Procedure

- Phase 1- Subject selection: in order to compose the sample, interviews and auditory perceptive assessments were conducted, in a total of 06 subjects.

The interviews provided the following data: age, height and changes related to puberty, more specifically regarding voice change. This material was recorded on a MP3 software, MP3 *Meeting Recorder & Dictaphone* in an iPad mini, 16GB device.

The perceptive-auditory assessment was performed by a Speech-Language Pathologist and Audiologist, specialized in voice, using the Consensus Auditory Perceptual Evaluation of Voice (CAPE-V)¹³, in order to quantify, using analogic scales, the degree of deviation of the following parameters: general degree, roughness, breathiness and strain. Pitch and Loudness variations were added as they are factors directly related to the period of voice change¹⁴. According to the millimetric analogic scales on the CAPE-V, degrees of deviation are defined as: 0 to 40 (mild deviation), 40 to 60 (moderate) and 60 to 100 (severe). Therefore, a cutoff value was set for disorders above 40 for all parameters.

Figure 1 shows the results of the perceptive-auditory assessment using the CAPE-V instrument¹³ that characterize the voice change period of the adolescents.

Figure 1

Subjects	General Grade (mm)	Roughness (mm)	Breathiness (mm)	Strain(mm)	Pitch Instability (mm)
A1	28	0	0	20	40
A2	55	0	30	0	60
A3	40	0	0	21	68
A4	46	0	10	25	80
A5	30	0	10	19	42
A6	31	0	10	0	42

Results from the perceptive-auditory assessment of voice (CAPE-V) of the six selected adolescents that confirm that the studied subjects are undergoing physiological voice change

Six participants were selected according to the criteria mentioned above. This number was considered adequate for the Focus Group Technique¹⁵, described below.

- Phase 2: completion of the Voice Descriptive Terms – VDT¹⁶ instrument, composed of a list of 100 adjectives used to describe voices, used on the self-perception assessment of vocal quality. The subjects were asked to mark ten adjectives that would best describe their voices, classifying each one as a positive or negative attribute.
- Phase 3: Focus Group Dynamics to gather psychic contents. This technique consists of the interaction among participants and researcher and aims to collect data from the discussion on specific topics⁽¹⁵⁾. The group encounters were previously scheduled with the group as follows: three weekly encounters, 40 minutes each, at a period of the day that was opposite to that during which there were classes. The encounters took place in school in a silent and comfortable environment. The material was integrally filmed for posterior analysis.
- Phase 4: Another completion of the VDT instrument for comparison.

3. Result Analysis

3.1. Focus Group: the analysis of the filmed/transcribed material involved the categorization of the sense nucleuses where the presence and frequency of showings were considered relevant to the purpose of the study. The analysis of theme categories of the contents was conducted in three steps: pre-analysis, exploration of the material and treatment of results¹⁷. Finally, a chart was built

based on the discursive practices, considering the production of senses by the subjects regarding the themes, based on the following categories: puberty changes, vocal changes and its repercussions on body image and on subjective and social contexts.

3.2. The results from both VDT completions¹⁵ (before and after group intervention) were analyzed in comparison with one another, in order to investigate the possible repercussions of the focus group. This information was registered on a specific spreadsheet, according to each participant's answers.

Results

Results are presented according to the following structure: sample characterization, contents from the group encounters and VDT results from before and after intervention. Relevant fragments from the Focus Group will be used to illustrate the analysis. The subjects are identified as A1, A2, A3, A4 A5 and A6 and the researcher as R.

I. Sample characterization

Figure 2 shows that all adolescents had pubic hair and acne, two (A2 and A5) did not have armpit hair and three (A1, A4 and A6) had beards. All of them reported vocal changes, which, for three of them (A4, A5 and A6) happened suddenly, and, for the rest, (A1, A2 and A3) the process was slow. Only two subjects (A2 and A4) said their voices were lower and all subjects pointed out precisely the period during which they began to perceive the changes.

Figure 2

Subjects	Age	Height	Armpit hair	Pubic hair	Acne	Beard	Last time height changed	Did your voice change?	How is your voice now
A1	14y; 5m	1.64m	Yes	Yes	Yes	Yes	Does not remember	Has been changing for 4 months	A little lower
A2	14y; 1m	1.63m	No	Yes	Yes	No	7 months ago	Has been changing for 2 months	A lot lower
A3	14y; 11m	1.72m	Yes	Yes	Yes	No	1 month ago	Has been changing for one year	A little lower
A4	14y; 4m	1.70m	Yes	Yes	Yes	Yes	4 months ago	Changed suddenly last year	A lot lower
A5	13y; 5m	1.48m	No	Yes	Yes	No	1 month ago	Changed suddenly 4 months ago	A little lower
A6	14y; 9m	1.60m	Yes	Yes	Yes	Yes	5 months ago	Changed suddenly 4 months ago	A little lower

Subject characterization according to age, height, body characteristics deriving from puberty and self-reported characteristics of the voice change process.

II. Relevant categories of the Focus Groups

II.1. Puberty Changes

The accounts reported that this condition, in general, is not bothersome. The perceptions on body changes began at 11/12 years of age for all subjects.

R- *Do you remember how you felt when these changes began?*

A1- *I didn't think it was weird, it's different. I was normal before and I'm normal now.*

A3- *It is normal to me, everyone will go through this phase.*

They also reported changes regarding their behavior with Family members, at school and in their personal interests:

R- *What changes did you notice in yourselves?*

A2- *At home, with my parents, my personality changed, I'm shyer. In school I also changed. But I don't know why.*

A6- *Everything changed. My personality, the way I talk. I argue with my mother all the time, I answer back, I come home late.*

A5- *I changed. At home I'm quiet but at school I'm different, I have more friends. I changed my personality, I was a bit boring.*

Summarizing: there is a certain weirdness and bother in the group regarding the behavioral changes. Even when recognizing the typical physical changes of adolescence as natural, they face new affective and behavioral demands, especially in dealing with their parents.

II.2. Voice change and repercussions in body image and in the subjective and social spheres.

When discussing the appearance of secondary sexual characteristics, some reported being bothered by voice changes, stressing the resulting instability and feelings of weirdness.

A1- *The body changes never bothered me. Only the voice, the voice bothers me.*

A3- *My mother is bothered, sometimes when I speak loudly, but I don't mean it, I'm not arguing with her. My family notices that my voice is changing because they are closer to me in my daily life. And my friends noticed when I came back from vacation, I am older..*

A6- *I hope it gets lower soon, I want this to be over soon. It gets very high-pitched when I strain it. I think it is weird when I hear my voice in a recording because it seems like it is high-pitched.*

Then, they asked to hear their own voices on the recorder, and the researcher presented parts of the recordings made during the Speech-Language Pathology assessment.

R- *How did you feel listening to your own voices on the recorder?*

A1- *The way I hear it on the recording has nothing to do with how I perceive it. But I read that the voice goes through certain areas in our body and is distorted by the time it gets to the head, when it does we hear it differently and that's why it's prettier. It is the real voice that others hear. Your real voice is the one others hear and not the one you do.*

A4- *Mine is worse than I thought.*

R- *But what do you think of this voice you have now?*

A6- *It has to change: my voice and my way of speaking.*

A2- *I think my voice causes people to be uncomfortable.*
A5- *I am bothered by my voice too.*
A2- *I think it is a little irritating. It was more controlled before.*

The fundamental role played by the voice in social relations was also approached. This function was mentioned by the group as an important element in the evolution of human communication skills.

R- *What is the role of the voice in our lives?*
A5- *Communication, without the voice people don't communicate.*
A2- *It helps to get a job, it is important to live. How does one live without a voice?*
A5- *The voice is like a personal characteristic.*

In addition to hearing their own voices, recordings of other people's voices were presented for identification of several vocal characteristics. In this context, the participants refer to the subjective dimension of the voice:

A1- *The voice of a politician begins by promising, and when it promises like this is because he won't keep it. He has this little voice.*
A6- *I wouldn't stop to listen to a person like me. My voice is very boring.*

Finally, they were caught in discussing the moment when they realized their voices changing:

R- *Who noticed that your voices were changing? Did you or anyone else comment?*
A1- *I did, my mother and my father.*

A4- *My mother, especially when I argue with her.*
R- *And what comments do people make?*
A4- *Oh, I hate it, same as when they stop in the middle of the street and say "look at how much you have grown". I don't like these comments: wasn't I supposed to grow?*
A2- *And they say: He already sounds like a little man.*
A4- *Oh, how awful, it is depressing to hear this.*
R- *But why is it bad to hear this?*
A6- *It would be better if they said: sounds like a man! My father says this: you sound like a man, huh...*

Thus, it may be perceived that the opinion of family members is seen as a point of recognition and bother regarding the transformations of adolescence, especially those regarding voice disorders. The instability generated by the perception of no longer belonging to the context of childhood, but also not belonging to the adult universe, is very clear with the dissatisfaction generated by the comment "sounds like a little man", heard by nearly all participants.

It is worth mentioning that the experience of hearing their own recorded voices was a point that generated impact in all members of the group, suggesting that this new experience enabled the adolescents to focus more on their subjective impressions, comparing their voices with others and with the previous perception that they had about their voices.

III. Results from the VDT

Figure 3 and Table 1 show the results from the VDT before and after intervention.

Figure 3

Subjects			POSITIVE CHARACTERISTICS		NEGATIVE CHARACTERISTICS
A1	BEFORE		X		X
	AFTER		X		X
A2	BEFORE	5	Ordinary, convincing, shy, cutting, tight.	5	Agitada, anasalada, fanhosa, imatura, raspada.
	AFTER	4	Pleasant, good, stable, light.	6	Soft, mellow, thin, slow, hoarse, shaky
A3	BEFORE	5	Seductive, nice, manly, good, happy.	5	Aggitated, loud, boring, strong, annoying.
	AFTER	1	Soft	9	Loud, boring, out of tune, unpleasant, ugly, thin, yelling, annoying, relaxed.
A4	BEFORE	8	High, brute, clear, hard, strong, low, potent, shy.	2	Shy, boring.
	AFTER	6	Aggressive, authentic, hard, strong, potent, mature	4	Loud, boring, yelling, annoying.
A5	BEFORE	10	Open, clear, good, shiny, ordinary, unmistakable, powerful, clean, potent, seductive.	0	
	AFTER	3	Ordinary, expressive, low.	7	Loud, brute, boring, squeamish, strong, light, limited.
A6	BEFORE	5	High, cheerful, strong, unmistakable, mature.	5	Brute, ugly, hard, annoying, fast.
	AFTER	2	Manly, strong.	8	Arrogant, unpleasant, ugly, dead, annoying, rude, dirty, low.

Results of the Voice Descriptive Terms (VDT) before and after Focus Group intervention.

Table 1. results of the types of vocal attributes of the Voice Descriptive Terms (VDT) before and after intervention

Types of vocal attributes	Before Intervention	After Intervention
Psychoacoustic vocal characteristics	16.6%	20%
Acoustic Attributes (timbre and voice quality)	36.6%	36%
Psychosocial Characteristics	46.8%	44%

The results from subject A1 were not considered in this comparison since this adolescent did not show for the second completion.

Regarding the first completion of the instrument, it may be observed that most subjects (03) marked an equal number of positive and negative characteristics, and for two of them (A4 and A5) the positive characteristics prevailed.

The psychoacoustic characteristics of voice (pitch and loudness) characterized 16.6% of the chosen adjectives, which corresponds to the high-low pitch opposition, revealing the self-perception of pitch oscillations/instability that are typical of the physiological voice change process. The same is true in regard to loudness, when the selection of the characteristic 'loud' suggests difficulties in controlling vocal intensity.

The acoustic attributes related to vocal timbre and quality corresponded to 36.6% of the selected adjectives. The most commonly chosen were: aggitated, brute and hard.

The psychosocial characteristics that correspond to the emotional markers and effects on the listener were the predominant vocal attributes (46.8%). These characteristics are mostly seen as positive and the most commonly chosen adjectives were: seductive, shy, common and annoying.

It may be observed that the results of the second completion showed that the subjects increased the number of negative vocal attributes chosen, in comparison with the first moment. The most frequent adjectives were: "boring", "annoying", "loud", "thin", "yelling" and "ugly".

In this second moment, it is observed that the psychoacoustic characteristics (pitch and loudness)

represent 20% of the chosen adjectives, revealing that the self-perception of the vocal oscillations and instability (frequency/pitch, intensity/loudness) generated by the process of voice change remains. As far as the acoustic attributes related to timbre and vocal quality, the chosen adjectives corresponded to 36%.

Finally, the psychosocial characteristics that correspond to emotional markers and effects on the listener remained as the predominant vocal attributes (44%). Albeit different from the first completion, these are mainly noted as negative characteristics, with the following predominant adjectives: ugly, annoying, unpleasant and boring.

Discussion

In regard to the body changes deriving from puberty, the described results agree with the studies¹⁸ on the sequence of events that happen to boys during puberty: there is first a growth of pubic hair and, much later, the growth of armpit and facial hair. This period occurs, in average, between 13 and 15 years of age, period in which the sample is included.

Another important aspect that should be observed is that all adolescents remembered the moment when their voices began to change, referring precisely the time at which they noticed these changes beginning. These results are close to studies that show that teenagers, at the period of physiological voice change notice the changes in their voices, which alters vocal self-perception^{7,9}.

The results from the perceptive-auditory assessment of the voices showed pitch/instability disorders in all subjects, in agreement with studies that state that pitch is the most significant parameter in characterizing physiological voice change, since during puberty, the angle of the male thyroid cartilage decreases to almost 90°, there is a change in the length and tension of the vocal folds and the voice varies between and high and a lower pitch^{14,2}.

The subjects expressed their perceptions about the process of voice change through their vocal self-perception, noting the decisive influence of subjectivity in this process. An example of this is, when in the responses to the VDT, they choose mostly adjectives referring to the psychosocial characteristics of voice (ugly, annoying, unpleasant and boring) and in their group accounts.

Specifically regarding the answers to the instrument mentioned above, in both moments (before and after the Focus Group) there was a greater frequency of attributes related to the psychosocial characteristics of voice, and the number of negative attributes increased after the group reflections about the process of becoming an adolescent, and of voice change.

The choice for negative attributes and the oscillation between negative and positive characteristics may be associated to the fact that, during adolescence, there is a transformation of the I based on the conflict between self-representation and the representation of others. This is accompanied by an intensification of the pulsional life, where the excess in libido turns the basis gained in childhood unstable, demanding rearrangements for full development of sexuality¹⁹.

It should be mentioned that in group activities, the members tend to a constant movement of creating and playing roles, making their ways of participating in a certain group process individual²⁰. In this direction, it was seen that, in the research group, the three subjects (A2, A3 and A4), identified with the greatest deviations in pitch, put themselves in the role of representatives, raising issues that were of common interest and manifesting their discontent clearly, regarding their perceptions about the changes in their voices and about adolescence.

These speeches are in agreement with studies^{7,6} showing that male teenagers noticed that they suffer greater voice changes, when emphasizing their discontent with vocal instability and frequency breaking. Likewise, they verified that there is a strong relationship between vocal self-perception, age group and gender, specifically during the phase of physiological voice change. The authors relate the effects of the physiological changes that mark this process with the entrance into adult life: the greater the age group of the adolescent (over 16-17 years of age), the greater their level of vocal satisfaction better opinion about their own voices – and regarding sex, female teenagers reported less impact on the voice than boys⁹.

In the researched group, the age difference is very small and, perhaps for this reason, the anguishes of the older subjects (A3 and A6) regarding their voices were similar to those of the other subjects. The self-perception of the study group was compatible with the anatomical and physiological voice change process reported by literature¹⁴. Even

though negative subjective aspects intensified after the intervention, it may be said that the experience of group interaction enabled an opening towards new sensory experiences, as it enabled the discursive circulation about the vocal change process and thus promoted the communicative process and the expression of bothersome issues regarding vocal instability and its subjective effects.

In terms of the effectiveness of therapeutic processes, studies have also shown the importance of vocal self-perception in group contexts and, in this case, have verified the changes in vocal behavior of subjects submitted to Speech-Language Pathology therapy in groups, as well as the importance of the development of self-perception in this process²¹. Thus, in agreement with the results of the present study, the researchers conclude that the perception of individuals is broadened based on new experiences, that aid in the formation of new senses and bring about changes in the understanding of their own voices, their bodies and their limitations.

In this context, vocal self-evaluation is considered a valuable resource. Thus, instruments that enable subjects' active participation are being studied in the context of Speech-Language Pathology and Audiology, from the premise that creating the opportunity to reflect upon one's own voice (its characteristics, aspects that interfere with vocal health, subjective contents) are extremely important in terms of vocal health promotion, epidemiological control, diagnosis and therapy^{22,23,24,25}.

In turn, the results of this study clarify that the human voice establishes a biological and psychic bond. Each existence's singularity may be manifested vocally, and this condition is essentially based on relationships, since the voice goes in the direction of another person, and is present in interpersonal processes as an essential component of oral language both for establishing interaction and exteriorizing feelings. Furthermore, the voice also provides information on the subject's identity: gender, age and entrance into puberty, above all, for men^{26,27}.

In face of the process of becoming a teenager, the accounts by the studied subjects revealed the impact of these changes – derived from puberty – and their articulation with psyche functioning, under the effect of new relational demands. It may be seen here that the corporeity resulting from the bond between physiological and psychic processes builds subjectivity²⁸.

For Psychoanalysis, body image is an acquired integration that is dynamic and, therefore, body changes cause changes to the body image that is built by the subject²⁹, with emphasis on the fact that this phenomenon is even more intense during adolescence. This process includes physiological voice change and the analyzed accounts point towards the conflict of the adolescents between the search for an adult identity and the loss of the infantile body image, enunciated by many with the adjective “voice of a little man”, attributed to them by adults. Still according to studies^{29,30}, this expression may be interpreted as resulting from the fact that adult eyes do not recognize in adolescents the signs of transition, thus instituting a gap between the loss of childhood and the non-recognition of an adult condition.

The relationship between literature and the results of this study allows for some final considerations: in the cyclic process of construction/reconstruction of body image and identity, physiological voice change was emphasized in the speech of the adolescents, who were bothered by vocal instability and its impact on others and wished for this process to be overcome as soon as possible. It is clear that the voice does not only carry words: its unstable, abrupt, and ‘out of control’ characteristics are anguishing.

Conclusion

The results show that the studied subjects report a strangeness and are bothered by the transformations of adolescence, above all by those related to voice disorders. They stress that, in this life cycle, the process of voice change is a factor of negative impact in the interaction with their interlocutors, with psychic repercussions in body self-image and on identity. Therefore, it may be said that the psychosocial aspects were predominant in vocal self-perception, which emphasizes the relevance of studies on voice in an approach that is not restrained to the organic dimension.

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