

* Essay

Health education for patients with asthma

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Abstract

The present article summarizes the foundations, knowledge and current scenario of asthma, through a theoretical review of clinical and psychological implications of the illness. It examines the concept of health education and health education programs for people diagnosed with asthma. Focusing on children and teenager demographics, it reflects on the question of motivation, considered essential in the educational intervention. It also investigates the use of audio-visual materials to promote motivation, commitment and adherence to treatment by young people. Finally, it concludes that audio-visual resources can have positive results in such regards.

Keywords: health education; asthma; motivation; Audio-Visual Media.

1. Introduction

Due to demographic changes – such as decrease in fertility and birth rates, progressive increase in elderly's proportion, changes in consumption patterns, lifestyle and rapid urbanization – a significant increase in chronic diseases, also called non-communicable diseases (NCDs) has been recorded by health authorities. (MCQUEEN, 2007).

Associated to this combination of factors - environmental, social, cultural and behavioral ones - chronic diseases are characterized by their non-infectious causes; gradual onset of manifestations; complex and multiple causations; long periods of latency; prolonged or undefined courses; early functional impairment or disability; and incurability. (MCQUEEN, 2007). Thus, chronic diseases do not indicate seriousness, while prolonged and incurable illnesses must be managed. (MARTINS, 2010).

While there are no immediate death risks, NCDs greatly impact and deteriorate patients, families and communities' quality of life.

According to Ramos-Cerqueira and Crepaldi (2000), the life quality concept life is becoming important and widely debated in the context of chronic diseases prevalence, being related to health as an important component of its care.

McQueen (2007) reports that up to the last decade of the twentieth century, these had replaced communicable diseases as the leading cause of death in all areas of the world (except sub-Saharan Africa and the Middle East), and, in the next 15 years, they will represent the cause of nearly three quarters of deaths in low-income areas. Indeed, over 80% of chronic respiratory diseases, for example, occur in countries with low per capita GDP. (CAMPOS, 2008).

According to McQueen (2007), in all likelihood, chronic diseases are the predominant source of overall morbidity, death and diseases during the twenty-first century. Ham (?? WHO?? *apud* MENDES, 2010) notes that the health care model should be evaluated, also taking into consideration the sanitary and economic impacts upon society.

The study '*Saúde Brasil 2009*' (Health Brazil 2009) revealed that despite the 17% reduction in chronic-disease mortality between 1996 and 2007, these still account for 67.3% of all deaths in the country, the largest proportion of deaths compared to other causes. In 2007, 705,500 people fell victim to chronic conditions. (BRAZIL, 2010).

According to Campos (2008), chronic respiratory diseases - emphysema, chronic obstructive pulmonary disease (COPD), and asthma, among others - which obstruct airflow affecting the airways, were *causa mortis* for more than four million people in the world in 2005.

One of the determining factors for the 2.8% decrease in mortality rates per year among chronic diseases in Brazil in 2007 was the reduction of smokers in the country from 1989 to 2009; the percentage of smokers in the population fell from 35% to 16.2%, depicting the success of the anti-smoking campaign (BRAZIL, 2010).

Nevertheless, chronic respiratory diseases have remained as the third leading cause of deaths among the most frequent causes, as shown in Table 1.

| CAUSE | DEATHS (N) | PERCENTAGE |
|------------------------|------------|------------|
| Cardiovascular | 308,466 | 29.4 |
| Neoplasms | 158,600 | 15.1 |
| Respiratory Diseases | 59,154 | 5.6 |
| Diabetes mellitus | 47,718 | 4.6 |
| Other chronic diseases | 131,659 | 12.6 |

Table 1: Absolute number (N) and proportion of deaths according to underlying causes.

SOURCE: BRASIL, SVS, 2010.

The numbers and percentages denote the urgency of intervention in these diseases, especially the need for accurate diagnosis and prognosis, for, in general, they are not recognized,

diagnosed, treated, and sufficiently prevented. Moreover, they might cause socioeconomic damage both to individuals and their relatives, and to society.

A positive correlation between the prevalence of chronic respiratory diseases and the fragmented health care system in Brazil can be inferred. Such belief lies on the failure of health professionals to provide continued assistance to the population, due to acute conditions encountered in emergency care units, outpatient clinics and hospitals, as well as the reactive user information behavior in relation to processes of prevention and treatment of diseases in public care units. (MENDES, 2010).

One of the most common chronic respiratory diseases is asthma, also known as bronchial asthma, which, according to the World Health Organization (WHO), affects 300 million people worldwide. (CAMPOS, 2008).

In Brazil, the disease affects 20% of the population: the country has the eighth highest number of asthmatics in the world (SBPT, 2009; VIEIRA, 2010). It is a significant cause for medical appointments and for a high number of emergency room visits and hospitalizations, with 367,000 admissions per year, which amounts to about 2.3% of the total number (VIEIRA, 2010). Excluding hospitalizations related to pregnancy and childbirth, asthma is the third leading cause of hospitalization among children and young adults in health care services funded by the National Health System (SUS). The costs with asthma outweigh those of other diseases such as tuberculosis and AIDS. (VIEIRA, 2010). It is estimated that 5% to 10% of patients with severe asthma cases consume 80% of the funds from the SUS health services allocated for the treatment of the disease. (VIEIRA, 2010).

Asthma is responsible for six deaths a day in the country, having caused about 2500 deaths per year in the last two decades (CAMPOS, 2008; SBPT, 2009; VIEIRA, 2010).

Campos (2008) says that, overall, mortality due to asthma is not considered high. However, he considers that 80% of deaths from asthma could be avoided if proper care had been taken in time.

Not coincidentally, WHO starkly warns that the prevailing health systems around the world fail to assist the population, as they are urged to review the health monitoring models. When health problems are chronic, the acute care model does not work. (MENDES, 2010).

In such context, regardless of therapeutic approaches, the current asthma management protocol concept, as well as those of most chronic respiratory diseases, focused on self-care and patient's involvement, is noteworthy, either for prevention or during crisis periods. According to Franzen *et al.* (2007):

Management of most chronic diseases is also characterized by the extensive responsibilities patients should have. Patient involvement in their own care is called self-care and has been defined as the ability of individuals in the management of symptoms, treatment, physical and psychological consequences, and lifestyle changes inherent to living with a chronic condition. (...) In the context of chronic diseases, it is essential that the patient participate in the decision process or action levels, because, in that way, health care will become more effective and efficient. The patient must understand...

However, even though the fact that self-care in asthma management is considered by experts as an important enhancement element to positively cope with the disease, the literature

recognizes it is a difficult control treatment to be achieved by patients as a result of the recommended standards (guidelines). (FRANZEN, 2007).

Therefore, a number of strategies have been developed in order to increase patient's involvement and reduce crises, such as the recognition and removal of triggers, and the monitoring of symptoms and medications. Among the strategies suggested by WHO, the increased flow of knowledge and information about the disease among patients is present (FRANZEN *et al.*, 2007), which tends to be a support to cope with asthma through increased awareness and change in outlooks and lifestyles.

According to Wen (2010), individuals need to understand factors harmful to their health in order to reach potential effectiveness of health treatments. Therefore, education for young patients is an effective way to promote health.

However, a problem arises: how to foster knowledge on asthma if the communication and education processes about the disease are still unavailable for the majority of the population? When they exist, they are often inefficient - leading to delays in decision making; there also occurs a lack of effective tools covering all aspects of the disease.

Education needs resources in order to promote asthma patients' involvement. Wen (2010) says that, in this regard, developing means of communication with the target audience is critical to the success of education, and that the use of technologies can be an efficient way to gain attention and motivate people, especially young people.

Among possible resources, exposure of audiovisual materials on asthma can significantly contribute to the creation of social spaces that foster a dynamic environment, stimulating the learning process regarding the disease.

This article discusses the main aspects related to communication and health education for asthma patients. Given the issues raised, it seeks to answer the following questions:

- Is self-care important in asthma management?
- To what extent knowledge about the illness through communication and education positively influences coping with the disease for patients and their families?
- Are audio-visual technological resources optimizing tools for knowledge about the disease, and are they capable of motivating patients in all aspects?

Pari passu, three hypotheses guide the study: (i) self-care is fundamental to the management of asthma, (ii) knowledge through communication and education contribute decisively to cope with the disease, and (iii) audio-visual resources are valuable teaching tools for promoting knowledge, management and self-management of the disease, besides being motivators for adherence and commitment to treatments.

The technical procedure employed in the search for answers to the problem posed is literature review, as the article seeks to make the theme explicit to the researcher through analysis of secondary data, available from different contributions in literature about the phenomenon at issue.

2. Discussion

2.1. Clinical aspects of asthma: brief explanation

One of the most common chronic diseases worldwide, asthma is a complex syndrome which displays different clinical manifestations in children and adults. (CAMPOS, 2007). According to Campos (2004), demographic studies indicate that asthma does not affect everyone equally. Characteristically, it is more severe among those of low socioeconomic status, although this aspect alone does not explain all differences. Ethnical, environmental and educational factors may also be involved.

Asthma is characterized, from the clinical point of view, as a chronic inflammatory disease of peripheral and central airways, resulting from the interaction of multiple cells of the respiratory tract, both structural and functional. (CAMPOS, 2007, 2008).

As a result of its main pathophysiological component, inflammation, the airways become hyper-responsive to a wide range of stimuli. Such change (the degrees of which are related to the severity of the disease) produces typical and recurrent episodes, such as dyspnea, wheezing, chest tightness and cough, usually associated with varying degrees of airflow obstruction, reversible either spontaneously or through treatment. (CAMPOS, 2007, 2008).

The cause of asthma is not completely understood. According to Campos (2007, 2008), there is evidence that changes in cell behavior are the consequence of genetic load, asthma being largely determined during fetal development and the first three to five years of life.

However, in addition to genetic factors, environmental factors and triggering events ('triggers') also contribute to the development of the disease, including allergic processes; infectious processes in the airways; respiratory irritants (tobacco smoke, air pollutants, occupational dusts, gases and chemicals); certain prescription drugs; specific stimuli such as cold air and exercise; and emotional state. (CAMPOS, 2008).

Thus, it is possible to infer that asthma is the result of the interaction between different factors and that there is still a great deal to understand about the complex mechanisms involving it under the pathogenic point of view. "Although the number of genes responsible for asthma are not yet set, there is ample evidence that it is a disease in which genetic and environmental determinants interact". (CAMPOS, 2004).

For Campos (2007), probably none of the current theories can fully explain the mechanisms involved, despite the new knowledge being compounded in the course of time.

Undoubtedly, the lungs of an asthmatic are structurally and functionally different. As a result of the interaction between genetic, cellular components and different behavior, compared to what is normal, and environmental modulation, abnormal immune mechanisms, modulated by numerous cytokines, and result in the changes and dysfunctions seen in asthma.

In regard to severity, according to the 3rd Brazilian Consensus on Asthma Management (2002), asthma can be classified as intermittent and mildly persistent, moderate and severe, despite the non-existence of a single classification table for the disease, due to the variation in its presentations, making it difficult to classify the diagnosis. For that reason, there is a "gold

standard" for diagnosing asthma, in general based on clinical history, physical examination and laboratory tests. (CAMPOS, 2007, 2008).

Asthma control is what allows patients to live their lives within normal quality standards. In countries such as Canada and the U.S., asthma control protocol is disseminated among schools so that educators can collaborate with the care for people with the disease since their first years of life. In Brazil, authorities do not have a care plan for the disease, since it is not infectious, but there is a plan regarding drugs used in treatment¹.

The National Sanitary Surveillance Agency, for example, prohibits the production or importation of drugs that have chlorofluorocarbon (CFCs) gas used in some inhalers to treat asthma. (SANTANA, 2011).

Thus, it takes more than prescription drugs for the treatment to be successful, given the many factors which modulate and influence the disease. (CAMPOS, 2008). The lack of stigma and prejudice associated with patients is discussed, to the extent that the *effort* of authorities in not recognizing it as public illness is an indicative of hegemony in determining and implementing public policies.

However, the fact that the representation phenomenon will not be object of scientific production by simply reconfiguring the senses captured without discussing the perspective of how individuals assimilate, produce and disseminate knowledge is emphasized.

2.2. Psychological repercussions of the disease

Asthma is a disease with significant impact on patients and those around them: it causes health problems, being the cause of suffering and damage to the quality of life, restricting usual occupational activities. It is the leading cause of absenteeism at school and work absences related to sleep disturbances, among other social consequences. (BOULET, 1994; CAMPOS, 2002).

Other adverse effects of the disease are observed, such patients' vulnerability increase; emotional damage; decreased cognitive performance; psychosocial loss and loss of self-esteem; negative self-image and self-awareness; common mental disorders (depression, anxiety and mood disorders); psychological disorders (emotional stress, often cause of reluctance to treatment); and symptoms of panic attacks or panic disorder (which affect one out ten patients, having bidirectional causal direction), especially in children and adolescents. (BOULET, 1994; RAMOS-CERQUEIRA; CREPALDI, 2000; LEHRER, 2002; NOGUEIRA; LOPES, 2010).

According to Nogueira and Lopes (2010), a prolonged course of a disease deprives the individual of many sources of personal pleasure, as it interferes with self-esteem, control of their own bodies and in interpersonal relationships. Such interference in a delicate stage such as adolescence, become even greater.

Besides problems inherent to adolescence, the association with a chronic disease like asthma can cause feelings of failure, hopelessness, anger, self-criticism, loss of self-esteem and fear, representing an extra burden for these adolescents. In children and adolescents, the consequences may affect not only the patient but their entire family and school universe, bringing complex problems and longer term implications, which will translate into loss of quality of life by the whole group.

The results of empirical research undertaken by these authors along with 240 adolescents suffering from asthma showed a strong association between the presence of common mental disorders and loss of quality of life in such patients (32.4%), repeated in different domains (emotional, physical activity, symptoms), confirming other findings in literature, which evaluate whether a chronic illness increases psychological distress. (NOGUEIRA, LOPES, 2010).

Indeed, a previous study by Carvalho *et al.* (2007) had similar results when assessing the presence and severity of anxiety and depression symptoms among patients with asthma and Chronic Obstructive Pulmonary Disease (COPD) in 189 outpatients. The results showed that anxiety and depression symptoms are common in patients with obstructive lung diseases and that, among asthmatic patients, this frequency is higher, regardless of age and lung function. (CARVALHO, 2007).

There are other studies showing that mental barriers in the organization of young asthma patients and others who find that the disease contribute to the development of behavioral problems and emotional difficulties in dealing with family. (TEIXEIRA, 2004).

According to Teixeira *et al.* (2004), children, especially, failing to meet their parents' expectations, develop poor self-image, thinking they are less capable, less interesting, less intelligent, "less in everything, in general." As a result, most of the time, they become insecure, presenting self-affirming difficulties when meeting the demands of reality, anxious when facing changes and events occurring within the family or in the outside world, besides having nutritional and relationship problems.

Therefore, the psychological implications of asthma are undeniable. The meanings attributed to the illness – both by the individual and the community within a cultural context - have attracted the attention of clinical psychology and psychotherapy. Although the strategies of care for children and adolescents with asthma emphasize the physical aspects of the disease, most recently the psychosocial aspects have been emphasized. (GOULART; SPERBER 2003; TEIXEIRA, 2006).

Medicine, in general, tends to be anchored in the objective apprehension of clinical or laboratory tests, disregarding the subjectivity of each individual patient. (KUPFER; VOLTOLINI, *apud* TEIXEIRA, 2006).

As it happens, often, children and teenagers "read" their illness, which consists of the dominant point of view, i.e., the view held by non-asthmatic patients, internalizing it. Abnormality and anomaly intertwine, when comparing normality with what the average for all people, characterizing everything not in the middle curve as pathological: patients with asthma would then be considered 'normal' before such 'imbalance', because 'normal people' do not show any symptoms of the illness. (MARCELLI, 1998).

Well, this is a very common and stigmatizing vision because asthma has no cure. Under this view, the asthmatic individual is in a situation of inability to be fully accepted by society, since society establishes ways of categorizing people and the total of attributes considered common and natural for its members. These 'pre-understandings' (why not, 'preconceptions') are transformed into normative expectations and demands of society, being presented in a rigorous manner (GOFFMAN, 1988).

Thus, we no longer consider the asthmatic as an ordinary and complete creature, reducing him to a damaged and diminished person. Such a feature is a stigma, especially when its discrediting effect is very large - sometimes the asthmatic is also considered defective, weak, and disadvantaged - creating a specific discrepancy between virtual social identity and actual social identity (GOFFMAN, 1988).

Stigma, therefore, refers to a deeply derogatory attribute, although it should be a language of relationships, not of attributes; a sociological trait is found in it: a person who could have been easily received in everyday social intercourse possesses a trait which may require attention, and turns away those one meets, destroying possibilities of their attention to other attributes. By dint of a stigmatizing attribute, the 'normality' of others is confirmed. (GOFFMAN, 1988).

Such perspective, in truth, does not help asthma patients at all. On the contrary, it might lead one to acquiring a low proactive status, contributing significantly and sometimes, decisively, to strengthen isolationism. (GOFFMAN, 1988).

Another point worth highlighting about the psychological implications of asthma is observed by Teixeira (2006). The author discusses the lack of attention allocated to emotional aspects of children and adolescents with asthma and their parents, which shows the dominance of biomedical rationality in dealing with the illness, associated with difficulty in obtaining better treatment adherence.

Suffering makes the individual face powerlessness, limits and bodily decay, exposing the person to the prospect of death, and rushing defense and coping strategies that exceed the body capability. Understanding the illness clinically with basis on organic diseases means conceiving it as an invention of the individual, as a moment he emerges, even if tied to the shackles of the suffering body (...). (TEIXEIRA, 2006).

Hence, the importance of including the merit (sense) of psychological and psychiatric analysis on the impact of asthma to treatments. By applying them, it is possible to create a dialogic space where children and adolescents can express their feelings and doubts, even in a playful manner. In this proposal, focus lies on the development of positive subjectivity about the disease and the psychological resources to deal with it, thereby contributing to minimize adverse effects, given the psychosomatic character associated with the illness. (GOULART; SPERBER 2003; TEIXEIRA, 2006).

In addition to psychotherapy as an adjunct to medical treatment, Lehrer *et al.* (2002) notify other interventions for asthma in the field of psychology: cognitive interventions such as written exercises for emotional expression; training of muscle and mental relaxation; yoga and hypnosis.

2.3. Asthma education

According to reports by Lehrer *et al.* (2002), the complexity of certain asthma treatments (use of various medications at different times for different purposes) makes it difficult to meet the medical guidelines, which represent about 30 to 46% of cases. In addition, doctors do not always have the time and appropriate communication skills to guide their patients through the necessary self-care necessary to cope successfully with the disease. (TEIXEIRA, 2011).

Given the stigma, fear, medication costs and other physiological aspects related to a chronic disease like asthma, providing information is not sufficient to increase adherence to treatment,

it being necessary to think of strategies for family involvement. (BETTENCOURT, 2002; CAMPOS, 2008).

Such considerations make room for the subject 'health education', conceptualized by Alves (2005) as a set of knowledge and practice factors for disease prevention and health promotion.

It is a means by which scientific knowledge on health, mediated by health professionals, affects the daily lives of people, since the understanding of the health-disease process determinants provides subsidies for the adoption of new habits and health behaviors.

The current idea on health education is driven by a model of dialogic/participatory communication, in which the user of health services is recognized as a bearer of knowledge which, though diverse from technical and scientific knowledge, is not de-legitimized.

Its goal is not to inform in upright and authoritative manners, but rather to transform existing knowledge in order to develop autonomy and emancipatory practices and accountability in health care. Through dialogue and exchange between scientific-technical and popular knowledge, "professionals and users can build shared knowledge about the health-disease process." (ALVES, 2005).

Health education is a dynamic process encouraging people to make decisions through their own efforts. Their teaching is directed to different audiences and can be applied to individual work, group work and work with specific communities, being developed in offices, schools, churches, communities, public and private companies. Thus, education associated to pharmacology is considered a pillar in asthma treatment.

According to the guidelines of consensus documents, developed by asthma experts' international committees - such as the National Heart, Lung and Blood Institute, NHLBI, U.S. - all patients should be instructed about the disease, its causes, nature of medication, self-management devices, techniques and action plans. The perspective is that asthma education has a positive impact on disease management, by reducing morbidity and improving quality of life for both children and adults. (LEHRER, 2002; BRYANT-STEPHENS, LI, 2004).

In Brazil, the '4th Brazilian Guideline for the Management of Asthma' (2006) follows this view. It reiterates the importance of education for building knowledge on the disease among individuals and families, by promoting skills and confidence in the treatment, which tends to cause a positive impact on active behavior changes toward a better quality of life.

Boulet *et al.* (1994) predicate that the main goal of asthma education is to reduce morbidity and mortality. However, as asthma mortality is relatively small, they consider disease control by most patients as a satisfactory result, which tends to promote improvements in quality of life and functional capacity.

Several health education programs focused on asthma patients and their families have been developed and applied within the research line 'Communication and Health Education'. Although not being new, the approach gained momentum in Brazil in the 90s, launching an anthropological view on the interaction of health professionals with the users-citizens. (CYRINO; CYRINO, 1997).

It can be argued that there is widespread agreement that asthma education programs for patients, families and caregivers is also an important component in the disease treatment.

(TEIXEIRA *et al.*, 2004). They aim at increasing knowledge, appropriate self-medication and change in behavior, especially among children and youths. (BOULET, 1994).

These programs have shown improvements in patients' life quality with significant reductions in the indicators associated with the disease, as the reduction of morbidity, the unscheduled outpatient visits and hospitalizations, symptoms (such as episodes of nocturnal asthma), absenteeism at work and school (Bettencourt, 2002; GUIDELINES ... 2006; SANTANA, 2011).

History of more accurate programs in terms of set standards and of audit confirms the improvement in self-management of illness, in positive change regarding self-care, in boosting of school performance, concerning children and adolescents, and in physical activity, with a remarkable decreasing in anxiety levels. In addition, some experience reports show good results in economic terms for the community, from the viewpoint of cost/benefit. (Boulet, 1994; SANTANA, 2011).

Asthma education programs should be based on the guidelines stemming from consensus, being applied in combination with medical consultancy and adapted to cultural, educational, socioeconomic and psychosocial factors of the target population. Such programs should be conducted in an appropriate environment and manner by multidisciplinary teams bringing together the largest number and variety of specialists such as doctors, nurses, physiotherapists, psychologists, educators and administrators, among others.

The team must be qualified to adequately convey information to patients about the principles of self-management, with due skill to adjust the form and means of disseminating the messages and generating knowledge. Moreover, it is important to recognize that the process of dissemination of knowledge requires a constant evaluation of educational practices adopted over the uniqueness of every individual.

Despite the acknowledged historical difficulties, found even in public service, there are examples confirming the possibility of structuring successful programs adapted to local context. (BETTENCOURT, 2002; RAMOS-CERQUEIRA; CREPALDI, 2000; BRYANT-STEPHENS, LI, 2004; BOULET, 1994; GUIDELINES ... 2006; VIEIRA, 2010; SANTANA, 2011).

As to form, the initiatives can be informative - having a minimum curriculum with simple oral, written, or by-programming information - and structured, using written, verbal and visual forms, accessible and appropriate language, monitoring of symptoms, medical consultations, reevaluations, individual action plans etc. In general, these latest forms have obtained better results. (BRAZILIAN GUIDELINES ... 2006).

According to Bryant-Stephens and Li (2004), asthma education involves not only the acquisition of knowledge about the disease, but also the ability to retain the knowledge learned, resulting in the effective daily application of acquired knowledge. Once having developed such ability, one can keep the knowledge longer and extend its practical application.

Similarly, Lehrer *et al.* (2002) consider that overcoming the gap between knowledge and behavior is still an important dimension to the development of health education, which is one of its limiting factors.

Perhaps for this reason, asthma education programs should especially encourage those involved to achieve adherence to treatment (according to Lask, 2003, the low adherence is the

norm in chronic diseases, such as asthma). Boulet et al. (1994) argue that motivation is essential to the educational intervention which promotes behavior change, adherence, commitment and application of principles of disease management.

Bryant-Stephens and Li (2004), for example, in the empirical study they undertook with 267 volunteer parents of children with asthma from an African-American community with low income, successfully used, among other tools, a multiple choice 'quiz' game (Asthma Knowledge Quiz) to test their knowledge about the disease and self-management, which included four major themes: asthma symptoms, triggers, prevention and proper use of equipment and medicines.

It is believed that the means used by these authors is motivation through playfulness. However, Boulet et al. (1994) argue that no teaching method or medium through which one intends to teach, works in the same way in all its configurations: many factors influence the selection of methods and means.

An example is children and adolescents with asthma, especially in areas such as school education. In this case, coercion and harassment rarely change behavior, on the contrary, they tend to reinforce it (LAKS, 2003).

2.4. Audio-visual materials: support to asthma education for children and adolescents

The use of audio-visual materials in asthma education suggested here can provide this population segment with great motivation as it is essentially a dialogic experience, revealing critical and creative possibilities of interaction with others (PEREIRA, 2011). "It is not a closed system, but rather procedural, in which it is possible to negotiate meanings between signs, realities and social levels." (PIRES, 2009).

Overhead transparencies, photographs, slides, computer programs and multimedia (movies and videos – captioned and/or narrated) constitute the audio-visual compound. They are one of the forms of mediation and dissemination of knowledge in a mediatized society, which can strategically insert education in the communication process (PIRES, 2010).

Notwithstanding, what still prevails is the traditional model reducing communication to its instrumental dimension or sees such communication as a mere means for disseminating messages, in addition to the school system, which reduces communication to processes of diffusion of rules based on writing, both not often enabling the audiovisual culture. (PIRES, 2001; PEREIRA, 2011). Therefore, according to Pires (2010), audio-visual media is still a major challenge for schools, as media production in school environment "induces interests and leads to behaviors which disrupt the usual context of such environment, shaped by old practices which since long ago have worked with disciplinarian streamlining, disintegrating the several types of knowledge (...)".

With technology as a resource not only for imaging, but also as a sociocultural paradigm today (PIRES, 2009), we can infer that audio-visual production is a record of the contemporary world.

Santaella (2004) helps us in this perspective when he remarks that everyday life now comprises a visual spectrum, a set of images which hypnotize and seduce, and a means by which we learn to decode messages. Thus, we are "(...) readers of shapes, volumes, masses,

interactions of forces, movements; readers of lights which turn on and off; readers whose bodies change in rhythm, synchronizing with world acceleration."

The development of other reading practices introduces a new kind of literacy (SOARES apud PIRES, 2009); and such new reader, not only reads the written word, but also images, and he has different interaction mechanisms and new reading skills, more sensory, perceptual and cognitive.

Pires (2010) argues that media culture, the audio-visual media culture, does not separate the sensitive subject from the intelligible subject; reflective activity from entertainment and, thus, such media culture refers to an emotional dimension, a contemporary imagination and to mythologies of our time.

In fact, audio-visual media, a complex amalgam of meanings, as noted by Rose (2002), produces, with images, sounds, and visual and sound effects, a language of signs going through the symbolic dimension which makes up reality, a language easily captured and decoded, especially by young people. Therefore, audio-visual production is an important pedagogical tool and device alongside them - especially videos bearing strong appeal to patients, despite their not being personalized material. (BOULET, 1994; PEREIRA, 2011).

From this perspective, audio-visual production can be understood as a 'representation of the self' in an interaction with others in everyday life, a portrayal of reality inspiring empathy and attribution of meaning to a context experienced through signs, symbols and meanings by which viewers recognize and identify themselves. And yet, as it sharpens young people's ability of seeing their own, and other people's conflicts, their playfulness and technicality, enabling everyone to participate. Audio-visual production also allows for an opening to others. (TERZIAN apud PIRES, 2009).

It is believed, therefore, that audio-visual materials can be valuable as teaching resources for asthma education in educational spaces, as they strengthen the patients' sense of identity and promote their sense of belonging (or membership) to the group or community (through recognition and identification).

According to Palacios (1995), the community is currently characterized by a sense of belonging, the feeling of being a community; of permanence (as opposed to ephemerality); by territoriality (real or symbolic); and by the way their members communicate with one another. Belonging, thus, is something which motivates interaction, cooperation, reciprocity, attendance and retention.

It also allows the formation of positive subjectivities regarding the disease; moreover, through language and giving voice to those who have something in common, the construction of important interaction areas between the different players involved. (PIRES, 2009, 2010). These spaces nurture debates on this subject (either through individual counseling or within the group itself); feedback; and reflective listening of what children and teenagers say, as well as their perception of their illness and their problems to adhere to a treatment (ensuring they were heard, understood and accepted in a non-judgmental way, validating their feelings). (BOULET, 1994; LASK, 2003).

Lacking this, there will hardly be motivation and successful asthma educational programs. The opportunities provided by the use of audio-visual materials are the factor which will sustain the

motivation to learn about asthma, the capture and retention of knowledge about the disease, as manage it, and provide higher levels of adhesion to treatment and correct application of prescriptions, with gains in life quality.

Audio-visual materials can still be quite useful as a supplementary resource, by clarifying graphical information or leading patients to raising issues who perhaps may have been neglected. (BOULET, 1994; TEIXEIRA, 2011).

3. Final considerations

Although asthma does not show high mortality rates, it may cause a countless amount of physical and psychological damage to patients and families as well as losses to all health systems. Not coincidentally, asthma is being addressed as a public health problem.

Asthma education is a cornerstone of successful disease treatment, producing positive effects in terms of knowledge, management, self-management and adherence. Many asthma education programs have been designed with these foregoing purposes. However, it is noted in the literature that many of them may not be effective in terms of adherence, especially among children and adolescents. Lack of motivation may be a relevant factor in this process, notwithstanding the fact that motivation is essential in the educational intervention.

A reflection on the use of audiovisual resources for educational purposes to convey information on asthma for sick children and adolescents in educational spaces, especially schools was proposed in this paper.

As discussed, such resources appear as substantially valid pedagogical devices on account of their being contemporary means of expression, more easily understood and encoded by this population is segment. They refer to imagination, signs and symbolic dimensions of reality and especially to a subject's emotional dimension.

It was noted here that audiovisual production enables other important motivational components: it allows the building-up of a positive subjectivity towards the disease; it fosters a sense of belonging to groups or communities; and it creates interactional spaces, essential to give voice to patients and to promote reflective listening and feedback in the process.

It is believed that audiovisual production is a resource which can deliver very positive results regarding motivation in asthma education among young people to induce behavior change, adherence and commitment. The literature on the subject is still very short. It is therefore suggested that studies be conducted to investigate the effectiveness of the use of audiovisual material as an educational tool in asthma education.

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Notas

1. Law 6259, of 30 October 1975, sets out rules on compulsory notification of epidemiological surveillance, and other measures for the prevention of so-called tropical diseases, hepatitis, sexually transmitted diseases, AIDS and tuberculosis. However, asthma and other NCDs, such as cancer, diabetes and cardiovascular disease are left out.