Therapeutic Education for Children with Chronic Diseases – Asthma Patients as a Model –

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Abstract:
This paper seeks to address the issue of therapeutic education for children with chronic diseases, with asthma patients serving as a model. It provides a brief overview of asthma in children, followed by an examination of the concept of therapeutic education in terms of its definition, objectives, content, advantages, and the techniques employed. It also presents a number of studies related to the subject. The paper then seeks to demonstrate the effectiveness of therapeutic education programs in helping patients understand their health condition and in improving health-related quality of life among sick children and their families.
Keywords: Children with asthma, therapeutic education.

Introduction

Asthma represents a significant burden for patients, their families, and the healthcare system as a whole. It is one of the most common chronic diseases among children, and its prevalence and severity have increased steadily in recent years (Lebras et al., 2004, p. 1186).

In the International Study of Asthma and Allergies in Childhood (ISAAC), in which Algeria was among the participating countries, the prevalence of asthma among children was found to range between 7.8% and 9.5%. Asthma also ranks among the leading chronic diseases responsible for hospitalization among sick children and is the primary cause of school absenteeism among school-aged children. Moreover, child mortality rates attributable to asthma have become a matter of concern in recent years because of the severity of symptoms and the recurrence of attacks, combined with poor adherence to treatment and inadequate management. Mortality rates have been estimated at between 4.0% and 7.0% among affected individuals (Abbou et al., 2022, p. 2545).

Effective asthma management depends on the level of knowledge and skills possessed by patients and those around them regarding how to deal with the health condition in different situations. These levels of knowledge and skills can be enhanced through participation in therapeutic education programs, which aim to help patients acquire the skills necessary to manage their lives in a manner appropriate to their chronic health condition.

In this paper, we seek to address the issue of therapeutic education for children with chronic diseases, with particular emphasis on children suffering from asthma.

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1. Asthma and Its Diagnosis in Children

Asthma begins very early in childhood in approximately half of affected individuals. School absenteeism, emergency department visits, and repeated hospitalizations are the main factors contributing to increased morbidity among young children. Although asthma in children may improve or even disappear after several years, it is essential to identify its phenotypes in order to attempt to predict its severity and progression (Dutau et al., 2016, p. 1).

The diagnosis of asthma in children and adults is based on the established understanding of this disease, a concept that has evolved over time. At present, asthma is viewed as a heterogeneous disorder or even as a syndrome characterized by the signs and symptoms experienced by the patient and attributed to variable increases in airflow resistance within the airways of the lungs. Many children experience recurrent symptoms of airway obstruction beginning during the first years of life. However, diagnosing asthma in infants and preschool-aged children remains difficult because of differences in the criteria used across guidelines and studies, as well as among physicians. This results in difficulties in determining the actual incidence and prevalence of the disease. In many cases, the term "asthma" is avoided at such early ages for several reasons, including difficulties in conducting pulmonary function tests to demonstrate the presence of airflow obstruction, insufficient data concerning the underlying inflammatory substrate, and physicians' preference to avoid assigning a diagnosis that implies a permanent disease at this stage of life (Moral et al., 2018, p. 3).

2. The Concept of Therapeutic Education

According to the World Health Organization (1998), "therapeutic education is a continuous process, integrated into healthcare, patient-centered, and encompassing organized activities involving awareness, information, learning, and psychosocial support related to the disease, prescribed treatment, healthcare, and other relevant care institutions, as well as the patient's health-related and disease-related behaviors. It aims to help patients and their families understand the disease and treatment, cooperate with healthcare providers, live as healthily as possible, and maintain or improve their quality of life. It is essential that, through therapeutic education, patients are able to acquire and maintain the resources necessary to manage their lives with the disease in an optimal manner" (Djatout et al., 2021, p. 34).

Vallée and Ricard (2016, p. 1115) define therapeutic education as comprehensive patient care organized and implemented through designed and purposeful activities aimed at providing information about the disease, treatment, health-related behaviors, as well as hospitalization procedures and modalities. Its purpose is to help patients and those around them better understand the chronic disease and consequently enable them to assume part of the responsibility for the medical care process and improve their quality of life (Vallée & Ricard, 2016).

According to Bououne (2019), therapeutic education is not limited to the cognitive dimension and the mere transmission of information to patients. Rather, it also takes into consideration the personal, social, and environmental factors that may be relevant to the emergence of various health problems (Bououne, 2019, p. 71).

3. Objectives of Therapeutic Education

Chegrouna (2020) indicated that every scientific process concerned with the healthcare of individuals has specific, clear, and precise objectives. Given the scientific and technological

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advances achieved in contemporary times, the primary objective—namely, the possibility of controlling and managing chronic diseases among individuals of different age groups—can be achieved by establishing an appropriate level of self-management among patients and enhancing their self-confidence (Chegrouna, 2020, p. 113).

The objectives of therapeutic education can be summarized as follows:

- Enhancing patients' skills and enabling them to engage in a range of activities aimed at improving their health and achieving a better quality of life.
- Involving patients in identifying the most important skills they may need and consider beneficial to themselves and their health, thereby making them more willing and committed to implementing health-related behaviors.
- Making patients more independent by enabling them to acquire the knowledge and master the skills necessary to modify their behavior in accordance with their health condition.
- Adopting various approaches to teaching skills and providing patients with sufficient time to practice them until they achieve an adequate level of mastery, that is, a level at which patients' self-regulation is consistent with their self-management (Chegrouna, 2020, p. 116).

4. Content of Therapeutic Education Programs

The efforts of those responsible for therapeutic education seek to achieve a range of objectives for both sick children and their families by focusing on several aspects, including the following:

- **The cognitive aspect:** This involves acquiring knowledge about the nature of the disease and identifying the factors that trigger symptoms, such as allergens, polluted environments, respiratory infections, smoking, interruption of basic drug treatment, increased physical exertion, and others. It also involves learning how to prevent asthma attacks, recognizing potential warning signs when an attack occurs, and having a thorough understanding of the classifications of prescribed medications, particularly the distinction between controller medication and medications used during attacks.
- **Skills:** This involves acquiring knowledge about inhalation techniques, inhalation chambers and devices, peak flow meters, and methods of controlling breathing in different situations, such as during physical activity or when experiencing stress.
- **Attitudes:** This involves developing the ability to express one's experience of the disease and share it with others, recognizing disease symptoms in order to take appropriate self-management measures, whether with or without assistance from others, and seeking intervention from healthcare providers according to the severity of the health condition, such as from the treating physician or hospital emergency services (ANAES, 2002, p. 2).

5. Advantages of Therapeutic Education

There are many benefits that can be achieved through implementing therapeutic education for patients and healthcare providers. The most important of these include:

- Enhancing patients' level of satisfaction and reducing their level of anxiety.
- Improving patients' quality of life and increasing their independence in performing daily activities.

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- Enhancing patients' adherence to healthy behaviors and enabling them to participate actively in the treatment process.
- Increasing effectiveness in reducing disease complications and preventing deterioration of the health condition.
- Ensuring continuity of healthcare and medical follow-up (Bastable, 2006, p. 9).

6. Therapeutic Education for Children with Asthma

During the 1980s and 1990s, most interventions in the field of therapeutic education for asthma focused on a number of skills and types of knowledge that patients were required to acquire concerning the disease, its causes, symptoms, and treatment methods. These interventions relied mainly on attendance at interactive educational sessions and the use of certain educational tools and materials. The emphasis was placed primarily on providing information, whether related to the content of therapeutic education or to healthcare providers, rather than on implementing a genuine patient-centered educational program that focused on the patient as an individual and on the importance of listening carefully to the patient and understanding their concerns and preoccupations regarding their health condition. A number of studies have demonstrated that focusing on what is referred to as limited education, or merely providing information, was not sufficiently effective in managing the health condition (Halimi et al., 2009, p. 1789).

Therapeutic education aims to help children with asthma and their parents acquire and maintain the skills that enable them to manage the health condition optimally. This requires the intervention of healthcare professionals to implement the therapeutic education process step by step by integrating it into the healthcare process as a whole.

Therapeutic education is considered a personal, constructive, and continuous process based on the quality of the relationship and communication between healthcare providers and the sick child and their family. The needs, experiences, beliefs, and representations of both the child and their parents must also be taken into consideration. It therefore constitutes an integral part of comprehensive care for children with asthma and seeks to achieve the following fundamental therapeutic objectives:

- Preventing or reducing, as much as possible, the occurrence and severity of symptoms.
- Promoting better functioning of the respiratory system, particularly the lungs.
- Helping children carry out their daily activities normally, such as attending school, engaging in physical exercise, and other activities (ANAES, 2002, p. 2).

7. Therapeutic Education Techniques for Children with Asthma

Various educational techniques, whether individual or group-based, may be proposed, including the lecture technique, questioning technique, brainstorming, problem-solving technique, objective-based education, independent or self-directed training, practical exercises, and others. It is also recommended that these techniques be implemented with sick children in a playful and interactive manner.

Regardless of the educational method employed, healthcare providers must rely on communication skills in order to establish a good therapeutic relationship with the patient and respond to their expectations through attentive listening and a proper understanding of their concerns. This should be done in a humane manner and without judgment that could undermine the patient's sense of worth and self-esteem. Communication with sick children should also be adapted to the individual characteristics of each child.

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The following table presents an example of the tools that can be used in therapeutic education for children with asthma, based on ANAES (2002), with adaptations:

Age Group	Teaching Tools	Knowledge or Practical Experience
2–5 years	- Children's songs. - Plays and role-playing activities.	- Inhaler. - Inhalation chamber. - Peak expiratory flow meter.
6–11 years	- Children's books. - Illustrated magazines. - Video tapes. - Compact discs.	- Inhaler. - Inhalation chamber. - Peak expiratory flow measurement. - Various games.
12 years and above	- Records/logbooks. - Internet. - Compact discs.	- Inhaler. - Peak expiratory flow measurement.
Parents	- Records/logbooks.	- Inhaler. - Peak expiratory flow measurement.

Source: ANAES (2002, p. 2).

8. Studies Addressing Therapeutic Education for Children with Asthma

A number of studies have addressed the issue of therapeutic education for children with asthma, both in foreign contexts and in the Algerian context. The following are some of these studies:

8.1. Chan et al. (2007)

The study by Chan et al. (2007) aimed to determine the effectiveness of home-based therapeutic education using Internet technology among children with asthma compared with care provided in medical clinics. The study involved 120 children of both sexes, aged between 6 and 17 years, and lasted for one full year of follow-up. At the end of the intervention, the researchers observed an improvement in the quality of life of the participants in both groups: the group receiving the Internet-based therapeutic education program, which consisted of 60 participants, and the group receiving follow-up care in medical clinics, which also consisted of 60 participants. An increase in the level of knowledge about the disease was also recorded compared with the participants' level of knowledge at the beginning of the study (Chan et al., 2007, p. 569).

8.2. Gauron (2010)

The study by Gauron (2010) aimed to evaluate a therapeutic education program for children with asthma at an institution specializing in allergies and asthma. The program employed an air-games technique and involved 11 children aged between 6 and 15 years. The program was implemented over a continuous period of nine months. The findings demonstrated an improvement in the quality of life and an increase in the level of self-confidence among the children participating in the study, in addition to an increase in their knowledge concerning their health condition (Gauron, 2010, p. 18).

8.3. Beydon et al. (2012)

The study by Beydon et al. (2012) examined quality of life, asthma control, and therapeutic education among children with asthma. It was conducted on a sample of 54 children with asthma, with a mean age of 6.8 years. The participants underwent a therapeutic education program consisting of four consecutive educational sessions. The results showed an

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improvement in the quality of life of 42% of the participants. The number of visits to medical emergency departments also decreased by 62%, while the level of control over the disease and its symptoms improved among 64% of the participants (Beydon et al., 2012, p. 105).

8.4. Abbou et al. (2022)

The study by Abbou et al. (2022), entitled "Therapeutic Education for Children with Asthma: Investigation and Field Application on a Number of Cases," focused on therapeutic education for children with asthma through a field-based investigation and practical application. The study included 70 participants aged between 5 and 12 years, who were divided into ten groups, with each group consisting of seven children who regularly and routinely attended the pediatric department of the Mustapha Pacha University Hospital Center in Algiers.

The intervention plan included group-based, educational, and interactive sessions involving the parents of the sick children over a period of approximately two and a half months. The researchers used several instruments, including two knowledge assessment scales, one designed for the sick children and the other for their parents; the Asthma Control Test (ACT); assessment forms for inhalation techniques; and a peak expiratory flow meter, in addition to several educational materials, including books, illustrated cards, videos, and others. The results of the study showed a fivefold increase in the level of knowledge and skills among the sick children and their parents, which had a positive impact on their ability to control and manage their health condition (Abbou et al., 2022, pp. 2543–2555).

8.5. Chegrouna (2020)

Chegrouna's (2020) study, entitled "The Effect of a Therapeutic Education Program on Self-Efficacy among Children with Asthma Aged 8–14 Years," was conducted on a sample of eight children with asthma. The participants were divided into four groups, with each group consisting of two children. The study was conducted in Batna Province using a case study model designed by the researcher herself, a questionnaire on sources of self-efficacy among children developed by the researcher, and a self-efficacy scale for children with asthma, which was also translated by the researcher.

One of the main findings of the study was the presence of differences with a large effect size between the level of self-efficacy before and after the implementation of the therapeutic education program among the children with asthma, in favor of the post-program assessment. The study also revealed an improvement in communication between the sick children and their families and between the children and the treatment team following the implementation of the therapeutic education program.

Commentary on the Above-Mentioned Studies

An examination of the findings of the aforementioned studies allows several observations to be made:

- All of these studies had a field-based and practical character, as they involved conducting interventions in real-world settings and implementing therapeutic education programs with the children with asthma and their families who constituted the study populations.
- Appropriate methodologies were adopted according to the nature and objectives of each individual study, including the experimental method, the clinical method, and the descriptive-correlational method. A variety of instruments and resources were also

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employed, including psychological scales, case study models, and pedagogical materials and media such as books, illustrated cards, the Internet, video tapes, asthma assessment scales, and peak expiratory flow meters.

- In addition to children with asthma, their families were involved in most of these studies because of the fundamental role played by the family environment, particularly parents, as well as the social environment of sick children, in achieving effective management of the health condition through rehabilitation and participation in therapeutic education programs.

Conclusion

Although it is extremely difficult to achieve complete control over asthma attacks, appropriate patient care can help control the disease and maintain a good quality of life for patients.

In children with asthma, the objective of asthma management remains optimal clinical and functional control. Children experiencing persistent symptoms should receive long-term daily medication to control the underlying inflammation and prevent attacks and exacerbations. Asthma treatment primarily relies on inhaled medications. However, prescribing these medications alone is not sufficient; the different inhalation techniques must be properly explained and taught. The child must also learn how to manage and prevent asthma attacks by avoiding triggering factors.

Living with a chronic disease means that patients must learn how to control and manage their condition so that they can remain as independent as possible by knowing how to prevent and manage asthma attacks.

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