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## Edukacja zdrowotna a jakość życia dzieci chorych na astmę oskrzelową

### Streszczenie

**Wstęp.** Astma oskrzelowa jest narastającym problemem zdrowotnym współczesnego społeczeństwa. Wśród wielu zagrożeń, jakie niesie ze sobą, istotnym jest upośledzenie jakości życia, wiążące się z: koniecznością systematycznego stosowania leków, pojawieniem się objawów ubocznych leczenia oraz niebezpieczeństwem występowania zaostrzeń zagrażających życiu chorego. Wiele doniesień naukowych podkreśla znaczenie edukacji zdrowotnej w podnoszeniu jakości życia pacjentów.

**Cel pracy.** Celem pracy była ocena wpływu poziomu wiedzy o chorobie i zachowaniach prozdrowotnych na jakość życia dzieci chorych na astmę oskrzelową.

**Materiał i metody.** Badaniami objęto 100 dzieci leczonych z powodu przewlekłej AO w Poradniach Pulmonologicznych DSK w Lublinie. Jako narzędzie badawcze wykorzystano: kwestionariusz PAQLQ, test wiadomości o astmie opracowany dla celów pracy oraz analizę dokumentacji medycznej.

**Wyniki badań.** Dzieci, które posiadały wystarczającą wiedzę o astmie, lepiej oceniły swoją jakość życia w stosunku do pozostałych. Analiza statystyczna wykazała istotny wpływ poziomu wiedzy o chorobie na funkcjonowanie emocjonalne badanych dzieci ( $p=0,005$ ). Okazało się, że w miarę wzrostu wiedzy o astmie, ankietowane dzieci rzadziej doświadczały negatywnych emocji wynikających z choroby, takich jak: lęk, niepokój, zmartwienie, niezadowolenie czy zdenerwowanie. Dzieci z wysokim poziomem wiedzy zdrowotnej rzadziej też, w porównaniu do pozostałych, miały poczucie mniejszej wartości, bycia innym czy wręcz odrzucenia przez środowisko. Zastosowana analiza statystyczna wykazała istotnie niższą ocenę jakości życia u dzieci z wysoką umiejętnością samokontroli choroby w odniesieniu do pozostałych ( $p=0,033$ ).

**Wnioski.** Wysoki poziom wiedzy o własnej chorobie wpływał pozytywnie na stan emocjonalny dziecka, zaś prowadzona samokontrola astmy ograniczała jego aktywność życiową. Przeprowadzone badania niezbicie potwierdzają konieczność włączenia edukacji zdrowotnej do kompleksowego postępowania leczniczo-pielęgnacyjnego.

**Słowa kluczowe:** astma oskrzelowa, dzieci, edukacja zdrowotna, jakość życia.

## Health education and the quality of life in children suffering from bronchial asthma

### Summary

**Introduction.** Bronchial asthma has been an increasing health problem of modern society. Among many threats that asthma creates, there is a deterioration in the quality of life associated with regular administration of medicines, with side effects related with the treatment and life threatening incidents associated with exacerbation of the symptoms. Many research reports emphasize the importance of health education in improving the quality of life of the patients.

**Purpose of study.** The purpose of study was to evaluate influence of the level of knowledge of asthma and health-promoting behaviors on the quality of life of children suffering from bronchial asthma.

**Material and methods.** The subjects of the study were 100 children with chronic bronchial asthma treated at outpatient pulmonological departments of Children's University Hospital in Lublin. The PAQLQ survey, the test of knowledge about asthma designed for the purpose of the study and the analysis of medical records, were the research tools. The material was used to evaluate the level of children's knowledge about asthma, identify deficits in certain fields and self-control skills.

**Results.** The statistical analysis confirmed a significant influence of the level of knowledge on emotional functions of the examined children ( $p=0.005$ ). It turned out that with the increase of knowledge, the respondents less frequently expressed negative emotions associated with the disease, such as fear, anxiety, worry, dissatisfaction or nervousness. Children with high level of knowledge seldom reported the feeling of lower value, being different or outcast from their environment in comparison to others. The analysis of the table reveals that sick children are not able to keep self-control charts successfully, monitor the course of asthma with the use of pickflowmeter or prevent, identify and cope with exacerbation. Statistical analysis revealed significantly lower quality of life among the children with mastered skills to self-control the disease in comparison to others ( $p=0.033$ ).

**Conclusions.** High level of knowledge of the patients about the disease positively influenced children's emotions; however self-control of asthma reduced children's daily activities. The study confirmed the necessity of including health education into complex therapeutic – nursing management of the disease.

**Key words:** bronchial asthma, children, health education, quality of life.

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## INTRODUCTION

Bronchial asthma (BA) has been an increasing health problem of modern society [1, 2]. Among many threats that asthma creates, there is a deterioration in the quality of life (QL) associated with regular administration of medicines, side effects related to treatment and life threatening incidents of exacerbation [1, 3, 4]. Many research reports emphasize the importance of health education in improving QL of the patients [1, 3-9]. If the patients suffering from BA received health education that would reduce the frequency of exacerbations, the number of hospitalisations as well as school absence would be reduced as well.

## PURPOSE OF STUDY

The purpose of study was to evaluate the influence of the level of knowledge about asthma and health-promoting behaviors on the quality of life of children suffering from bronchial asthma.

## MATERIAL AND METHODS

The subjects were 100 children with chronic bronchial asthma treated at outpatient pulmonological departments of the Children's University Hospital in Lublin. Diagnostic survey in the form of a questionnaire was used; the research tool was Polish version of the questionnaire used to examine the quality of life of children suffering from asthma (PAQLQ) designed by Juniper. Another research tool was a test verifying the level of knowledge and skills declared to self-control asthma designed for the study. Besides, ambulant treatment charts filed at the outpatient department were analyzed, too. The results were statistically assessed with SSPC 8.0. Significant differences between the examined parameters were determined by Kruskal-Wallis's test and Dunnett's T3 test of multiple comparisons, dependences determined by Spearman coefficient of correlation,  $p < 0.05$  assumed significant.

## RESULTS

The study group consisted of 64 boys and 36 girls, 8-17 years old (mean age  $12.3 \pm 2.6$ ); 53% lived in the country and 47% in town. Mean duration of disease was  $8.0 \pm 3.6$  years (min 1 year – max 12 years). Chronic moderate asthma was detected in 51% children, chronic mild asthma in 45% and 4% cases were of chronic severe form. A vast majority (89%) developed bronchial asthma before they were 8. The analysis of the material revealed that every fifth child among the respondents (20%) participated in an educational program, the others (80%) did not (Fig. 1). Individual and group program took the form of so called „Schools of Asthma and Allergy”. Additionally we defined the scope of needs for health education among the respondents (Fig. 2). The illustration implies that a remarkable majority of the respondents (78%) felt the need for health education, one fifth of them (22%) did not want any information about the disease and health-promoting behaviors. Basing on the test of knowledge and skills declared to self-control asthma, the results were analyzed qualitatively and quantitatively. (Tab. 1 and 2). The data suggest that sick

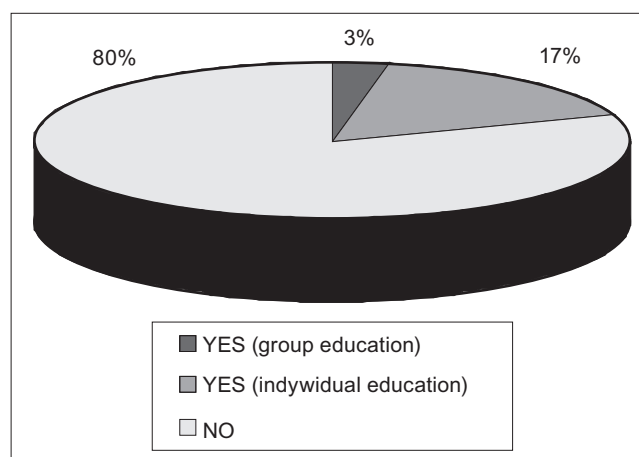


FIGURE 1. Presence in health education among the examined children (n = 100).

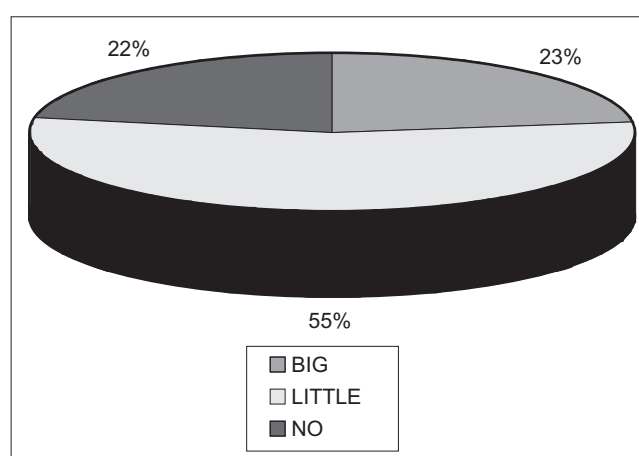


FIGURE 2. Demand for health education in the group of examined children (n = 100).

children do not have sufficient knowledge of the causes, treatment regimen or exacerbating factors. Children who had sufficient knowledge of asthma assessed their own QL better in comparison to others. The statistical analysis confirmed significant influence of the level of knowledge on emotional functions of the children examined ( $p = 0.005$ ). It turned out that if knowledge increased, the respondents expressed negative emotions associated with the disease like fear, anxiety, worry, dissatisfaction or nervousness less frequently. Children with high level of knowledge seldom reported the feeling of lower value, being different or outcast from their environment in comparison to others. The analysis of the table reveals that sick children are not able to keep self-control charts successfully, monitor the course of asthma using pickflowmeter or prevent, identify and cope with exacerbation. Statistical analysis revealed significantly lower QL among the children with mastered skills to self-control the disease in comparison to others ( $p = 0.033$ ). The analysis of correlations confirmed significantly negative correlation between those factors ( $r = -0.274$ ,  $p = 0.006$ ), which suggested decreasing QL with increasing self-control of the disease.

**TABLE 1. Knowledge of asthma among the examined children determined by the test of knowledge (n = 100).**

Knowledge	Sufficient %	Incomplete %	Lack %	Total %
Name of disease	96.0	4.0	0.0	100.0
Cause of asthma	0.0	43.0	57.0	100.0
Symptoms of asthma	65.0	33.0	2.0	100.0
Exacerbating factors	49.0	40.0	11.0	100.0
Names of taken medicines, their action and ways of administration	69.0	0.0	31.0	100.0

**TABLE 2. Asthma self-control skills evaluated subjectively by the examined children (n = 100).**

Ability	Sufficient %	Incomplete %	Lack %	Total %
Regular and proper usage of recommended medicines	84.0	16.0	0.0	100.0
Prevention of asthma attacks	44.0	55.0	1.0	100.0
Monitoring the course of asthma by pickflowmeter	15.0	30.0	55.0	100.0
Self-control chart	12.0	14.0	74.0	100.0
Identification of asthma exacerbation	5.0	87.0	8.0	100.0
Coping with attacks of asthma	17.0	68.0	15.0	100.0
Usage of MDI or DPI inhaler	93.0	0.0	7.0	100.0

## DISCUSSION

Education of children suffering from BA is of primary importance in the process of complex therapy [1, 2, 10]. Successful treatment depends on the degree of cooperation with the sick child and his/her motivation to follow the instructions resulting from, among others, knowledge of the disease and his/her belief in effectiveness and safety of the activities undertaken [5]. Many authors emphasize that well run health education can improve QL of the sick children [1, 3-6]. Studies by Farnik-Brodzińska and Pierzchała suggested a significantly increased assessment of QL among the sick patients with BA as a result of health education [9]. The discussed material revealed missing knowledge of the causes of asthma, treatment regimen, which is worrying. The patients do not know the background of the disease, the aim of treatment and are not able to avoid the factors that can intensify the symptoms of asthma or consciously follow the treatment plan. Those persons often neglect inhaled steroids and limit the therapy to administration of medicines for dyspnoea taken in emergency to relieve the symptoms promptly. GINA emphasizes that education of patients is one of the necessary actions to control the symptoms [2]. The results obtained by Young et al. prove that knowledge of the disease and health-promoting behaviors can reduce the tension and stress that intensify shortness of breath [11]. Kądziała-Olech suggested that knowledge of the disease decreases the fear of the unknown and positively influences children's emotions [12]. Also Stańczyk et al. demonstrated a significant relationship between disturbed

emotions and insufficient knowledge of the disease itself among the children [13]. Our results comply with others. In the group of children with high level of knowledge of the disease QL was assessed significantly higher in the area of emotional functions in comparison to other children. Many authors underline the importance of self-control in increasing the effectiveness of treatment [1, 5, 8]. The analysis of the study material revealed that even high level of knowledge of the disease does not guarantee its application in practice. Although majority of the examined subjects had sufficient knowledge of asthma, they neglected prophylaxis of exacerbations. Lack of skills to monitor asthma by pickflowmeter and self-control chart may be due to not recommending the method by the doctor or patient's unwillingness to put on additional duties. Our results revealed a deteriorated QL with increasing level of self-control among the children surveyed. The result might seem surprising and contradictory to common belief that QL should increase due to self-control of the disease. It may result from the fact that self-control limits freedom of children, creates many inconveniences and difficulties due to necessary changes in the life style with prohibitions and limitations. Also Dolinar and Stevens observed that the patients may perceive regular monitoring of the disease as additional complication worsening QL [14, 15]. Our study found little participation in health education among the children, which is annoying. However, there is a good prognostic factor, i.e. big proportion of the children showed interest in better knowledge of asthma and in the treatment methods. That gives some hope that the effects of treatment will improve. The results help identify the scope of health education demands and specify directions of educational work with asthmatic patient.

## CONCLUSIONS

1. High level of knowledge of the disease positively influenced child's emotions; however self-control of asthma reduced child's daily activities.
2. The study confirmed the necessity of including health education into complex therapeutic – nursing management of the disease.

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