



# EVALUATION OF EFFICIENCY PRACTICAL ISSUES IN THE MANAGEMENT OF CHILDHOOD ASTHMA

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## ABSTRACT

Asthma is the most common chronic illness in children and adolescents. The pediatric "Asthma School" has been established to improve the health and quality of life of children with asthma through education and support. The purpose of work is evaluation of efficiency education adolescents, children and parents in prevention, adequate use medications and control of asthma. It was operational investigation. The study was enrolled 70 participants from 7 cities in FB&H, which were attended "Asthma School". Evaluations of efficiency of education program have been done through questionnaires using 5-point scale. Observing variables were: attitude about quality of education and level of knowledge about asthma at the end of the educational round. "Asthma School" attended 62 parents and 8 adolescents. The age of children was 6-14 years. The most of participants were with middle school education (64,3%). Successfulness of seminar was score with highest point of scale by 79%. Access to health information was important for patients in adequate treating illness (80,6%) and in prevention of asthma (15%). There was a significant improvement for 38,4% in the basic knowledge of asthma among participants, from 2,7 before to 3,8 after education. Among 20 children that have learned proper technique breathing there was not register worsening symptoms of asthma by 83,4%. There was a significant improvement in the condition of patient, following by greater value PEF (72,3% participants). The results implicate necessity of continuity such action in order to make life of young asthma patients better.

**KEY WORDS:** asthma, school, children, adolescents

## INTRODUCTION

Asthma represents a public health challenge in the World today. It is estimated that every ten years the number of asthma patients has risen for 20-30%. The prevalence of asthma in child age is 4-20% (1,2). In USA the estimated annually prevalence of asthma is 4,3% (between 3,6-6,2%). In the Europe asthma presents the most common chronic disease of children in the age of 5-14 years. Asthma is on the third rank of the reasons for hospitalisation children under 15 years. The rising trend in asthma morbidity has been reflected in an increase in asthma death rates. These deaths occurred asthma patients:

- after severity of the asthma attack was underestimated and under treated;
- if patient had been inadequately treated;
- refuse to ask help for doctor and
- if parents or child have not enough knowledge to give the first aid and adequate help. Asthma has influence on life quality of sick children. Asthma costs in the USA for children under 18 years were estimated at 3,2 million U\$ annually.

WHO initiated a collaborative project - the Global Health Initiative for Asthma (GINA) - to address asthma as a global health problem. GINA objectives are to decrease asthma morbidity and mortality by developing and implementing optimal strategies for the management and prevention of asthma. The Providence School Asthma Partnership was formed to improve the health and quality of life of children with asthma through education, management support and advocacy. The program include: training for doctors and nurses to increase understanding of asthma and its treatment; improving child and family knowledge and confidence in managing asthma so that they can take effective action towards controlling asthma. The "Asthma Schools" were opened in the Europe and America. The goal of education is to teach children to live with asthma and improving the quality of their life. Those schools have been effective in reducing the number of school days missed due to asthma and in decreasing the impact of asthma on everyday life (3,4,5,6). In FB&H there is a lack of data about number of asthmatic children. Scientists found that children, suffering from severe asthma symptoms, are seeking help from healthcare providers. They also found that young asthma patients and their parents had not enough knowledge about drug treatments they need to keep their disease under control. In cooperation with Pae-

diatric Clinic in Sarajevo has been opened "Asthma School", which following GINA principal (5). Education program was modified for our region and conducted by eminent experts. UNICEF supported those activities and opening still 6 "Asthma Schools" in the big "Homes of people health" placed in 6 big cities in FB&H.

## THE PURPOSE

The purpose of this paper is to evaluation efficiency of "Asthma School" for children and their parents about prevention, adequate use medication and control of asthma.

## METHOD

The method of the study was an operational investigation about efficiency of education program "Asthma School". Those schools have used innovative, interactive workshops for parents and their children, which included short introductory lecture, films, discuss and practical issues. Classes are offered in-group of 8-10 participants. During the class, medical equipment for home asthma is explained through demonstration; families receive free peak flow meters. The study was enrolled 70 participants from 7 cities in B&H, which were attended "Asthma school". Evaluations of efficiency of education program have been done through classic methodology of analysis structure, process and outcome using questionnaires with a 5-point scale. Maximum point was 5. Observing variables were: attitude about quality of education and level of knowledge about asthma at the end of the educational round. The twenty free chosen health evidence documents were used for health control. Evaluation was based on improvement in the condition of patients following by greater value of PEF.

## RESULTS

"Asthma School" attended 62 parents and 8 adolescents. The age of children was 6-14 years (Table 1). The number of participants was some in each "Asthma School". The most of the participants were with middle school education (64,3%), which is in agreement with average education level in FB&H (Table 2). Parents with lower school level (14,3%), parents with out school or with incomplete school, were interested in work of "Asthma School". They wanted to help their children in asthma control. Evaluation of efficiency of education program has been done through 5-point scale. 1-point means unsatisfied, 2-point means good, 3-point means very good,

SCHOOL	PARENTS AND CHILDREN	ADOLESCENTS	TOTAL
Konjic	9		9
Visoko	9		9
Sarajevo	10	1	11
Jablanica	8	3	11
Mostar	8		8
Travnik	11	3	14
Zenica	9	1	10
Total	62	8	70

TABLE 1. Distribution of participants according to city were they attended "Asthma School"

SCHOOL	WITH OUT SCHOOL OR WITH INCOMPLETELY SCHOOL	ELEMENTARY SCHOOL	SECONDARY SCHOOL	HIGH SCHOOL AND FACULTY	TOTAL
Konjic		22,2	66,7	11,1	100,0
Visoko	14,2	42,8	42,8		100,0
Sarajevo		10,0	70,0	20,0	100,0
Jablanica	54,5	9,1	36,4		100,0
Mostar			100,0		100,0
Travnik	21,4	14,2	64,4		100,0
Zenica	20,0	10,0	70,0		100,0
Average	14,3	15,7	64,3	5,7	100,0

TABLE 2. Education level of parents ( in percent)

SCHOOL	POINT					Without answers
	1	2	3	4	5	
Konjic			16,7	50,0	16,7	16,7
Visoko				33,3	66,6	
Sarajevo					100,0	
Jablanica				18,2	81,8	
Mostar			12,5		87,5	
Travnik				7,1	92,9	
Zenica					100,0	
Average			4,2	14,5	79,9	2,4

TABLE 3. Judgment about efficiency of work "Asthma School" ( in percent)

4-point means excellent and 5-point means extraordinary. 80% parents give maximum point for efficiency of work "Asthma school". Participants from different cities, which attended "Asthma School", pointed work of those school uniform (Table 3). Access to health information was important for patient in adequate treating illness (80%) and in prevention of asthma attack and allergens (15,7%). Out of 4,3% participants found that their attend of "Asthma School" unless (Table 4). Education level of parents was related important factor to

attitude of usefully of information for asthma control (Table 5). Significant more parents without school and with incompletely school thought that getting information were not useful ( $p < 0,005$ ,  $Df = 8$ ,  $h_2 = 200,4388$ ). The basic knowledge of asthma was estimated before "Asthma School" was started. Evaluation of knowledge has been done after educational round. Quantitative method with definite objective criteria's was used. 5-point has used when percent of correct answers was  $> 67$ ; 3-point has used when percent correct answers was 33-66;

SCHOOL	YES, FOR SUCCESSFUL TREATMENT OF DISEASE	YES, FOR PREVENTION ALLERGENS	UNLESS	TOTAL
Konjic	50,0	33,3	16,7	100,0
Visoko	100,0			100,0
Sarajevo	70,0	30,0		100,0
Jablanica	90,9	9,1		100,0
Mostar	75,0	25,5		100,0
Travnik	78,6	7,1	14,2	100,0
Zenica	100,0			100,0
Average	80,0	15,7	4,3	100,0

TABLE 4. Parents judgment about getting information in "Asthma School" (in percent)

SCHOOL	WITH OUT SCHOOL OR WITH INCOMPLETELY SCHOOL	ELEMENTARY SCHOOL	SECONDARY SCHOOL	FACULTY	TOTAL
Yes, for successful treatment of disease	14,3	16,1	64,3	4,3	100,0
Yes, for prevention allergens	9,1	18,1	63,6	9,1	100,0
Unless	33,3		66,6		100,0
Total	14,3	15,7	64,3	5,7	100,0

TABLE 5. Parents judgment about getting information in "Asthma School" according to their education level (in percent)

SCHOOL	POINTS		
	Pre-test	Post-test	Relation %
Konjic	2,7	3,8	+40,7
Visoko	2,2	3,9	+77,3
Sarajevo	3,5	4,0	+14,2
Jablanica	2,2	3,6	+63,6
Mostar	2,5	3,5	+10,0
Travnik	3,0	3,5	+16,7
Zenica	2,9	3,8	+31,0
Average	2,76	3,82	+38,4

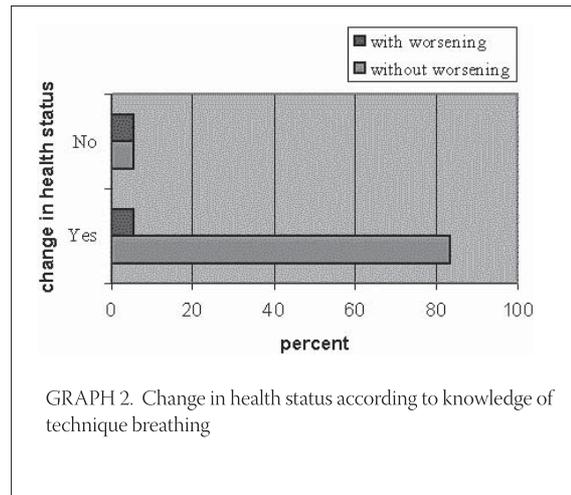
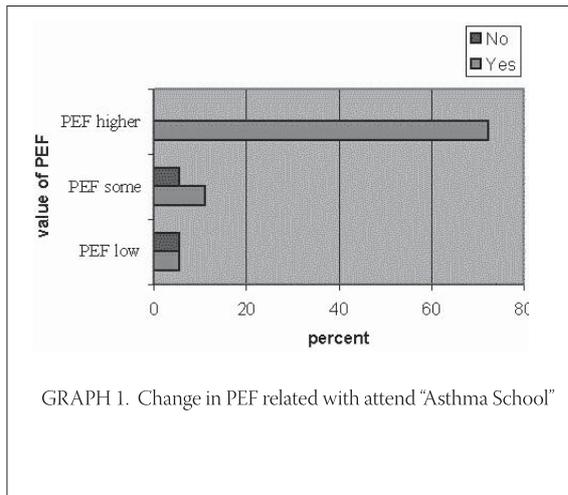
TABLE 6. Knowledge of parents and adolescents pointed by 1-5 scale

SCHOOL	WITHOUT SCHOOL	ELEMENTARY SCHOOL	SECONDARY SCHOOL	FACULTY	TOTAL
Pre-test	2,0	2,1	2,8	3,8	2,76
Post-test	3,1	3,9	3,9	4,4	3,82

TABLE 7. Knowledge of parents related with their education level pointed in scale 1-5

1-point has used when percent of correct answers was < 32. The basic knowledge was very poorly before they were attended of "Asthma School". It pointed 2,8. Higher basic education level had parents from Sarajevo. There was a significant improvement for 38,4% in the basic knowledge of asthma among partici-

pants from 2,7 before to 3,8 after education (Table 6). Basic knowledge and education level of parents have influence on achieve knowledge after education (Table 7). It is significant relation between achieve knowledge and education level  $p < 0,05$  for incompletely elementary school and finished elementary school



and  $p < 0,05$  for finished secondary school and faculty. Health condition of patients and PEF were used in evaluation of quality of health care. There was a significant improvement in the condition of patients which were attended "Asthma School" following by greater value PEF (72,3% participants). By only 5,5% of those participant PEF was some or lower (Graph 1). Health status is estimated such as worsening or improvement of symptoms of asthma. Health status has been showed in correlation with learned proper technique breathing. Among 20 children that have learned proper technique breathing there was not register worsening symptoms of asthma by 83,4%. By only 5,5% was not improvement in symptoms of asthma (Graph 2).

## DISCUSSION

Efficiency of education programs in "Asthma School" is object of many studies (1,3,4,5). Good education and prevention action have to goal make life of young asthma patients better. The goals in "Health for all-2010" for asthma are based on principles: monitoring and analysis information, intervention in prevention and reduction of asthma, partnership all subjects in the implementation, evaluation and control local programs through "Asthma School" (7). In Canton Sarajevo has found in period 2000-2004 an increase in number of asthmatics children for 22% (8). Results of performed education program of "Asthma School" in FB&H showed big efficiency. Education about asthma is important for improvement of basic knowledge about asthma and their taking control asthma. It is especially important for children and young people (4,9,10).

## CONCLUSION

There was a need for better education about asthma and for access to easy -to-take treatment to children. It is important to find a way to help families understand the importance of preventing asthma and achieving long-term management of disease. Organization and implementation of "Asthma School" on primary health care level in FB&H gives chance for all asthmatic children to improve quality of own life and contributes in process of managing asthma. Initial activities of UNICEF need support. It is important "Asthma School" integrate in health care pre-school and school children.

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