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A NEW HEALTH OCCUPATION OF THE HORIZON:  
RESPIRATORY EXERCISE SPECIALIST

Karen R. Butts<sup>1</sup>

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Abstract: The purpose of this paper is to describe perceptions of a new health occupations program on the horizon--respiratory exercise specialist. This program was developed and implemented after a culmination of 20 years experience and research in the field of physical conditioning and respiratory exercise care. The program for kindergarten through grade 12, utilizes a seven-step method of training for prevention and control of wheezing as its basic element. An evaluation of this training through the use of a survey instrument obtaining parental perceptions of the child's health progress was positive. A high percentage of responses indicated improvement in the child's health and attitude. The impetus has resulted in recommendations and anticipation of future research with the goal of developing and instituting a program to train students as respiratory exercise specialists within the framework of an allied health department of a community college.

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A new health occupation on the horizon, respiratory exercise specialist, may be of special interest for individuals interested in caring for asthmatics, especially children. While many adults are asthmatics, it is estimated that one-third of the six million asthmatics in the **United States** are under 17 years of age (Evans, 1979). Furthermore, the American Lung Association (1984) reports that asthma is the cause of more absences from school than any other chronic disease; with approximately eight million school days missed per year in the United States.

Asthma is serious, but usually reversible, causing an inability to breathe normally. Shortness of breath, chest tightness, coughing and wheezing characterize asthma. A narrowing of the air passages to the lungs (bronchial tubes) triggers the attack. This is caused by muscle spasm, swelling of tissue, and excessive mucus. Dust, irritants, strenuous exercise, sports, common colds, and viral infections can initiate problems for the asthma patient's airway.

Studies conducted in **1981** by the National Commission on Air Quality have shown positive trends toward the benefits of **air pollution** control (Miller, 1982). There is ample evidence from recent emission inventories documenting a definite correlation, ecologically and physiologically, between human health and the present environment. In legislative terms, the United States is one of the most aggressive nations against air pollution; however, minimal progress has been made due to the difficulties, complexities, and expense of controlling air pollution (Miller, 1982). As long as the pollution problem exists, there is an urgent need for the existence of respiratory exercise care, prevention, and control.

In a report **published by** the American Lung Association (1974), it was

noted that investigators have found asthma to be twice as prevalent in cities with high pollution levels. Specifically, air pollution has been found to damage the **cilia**, the bronchial muscles and airways, the **mucus** membranes, and the bronchial cells. The automotive industry and other industries responsible for sulfur oxides, carbon monoxides, and hydrocarbons, all considered **major** air pollutants, have been **cited** as causing damage to the respiratory tract. Of major concern is the increase of **photochemical** smog, the irritating haze resulting from the sun's effects on the pollutants. Prevalence of the **photochemical** smog in Southern California, particularly in and around the Los Angeles area, has necessitated new programs to help asthmatics.

#### Program Goals

The prime objective of a new respiratory exercise care program is to help children lead **normal** lives. The exercises, designed to meet each child's particular needs at an early age, help the child develop individual self-management of breathing. This is accomplished by teaching exercises for breathing, stretching, and relaxation which **will** ameliorate the asthma and related breathing difficulties.

The outcomes **of the** program may be many and varied. There **may** be a change in circulatory and respiratory systems as a result of the breathing exercises. A supple, strong physical body may develop as a result of nonexhausting stretching exercises. A positive self-image may emerge as a result of new awareness of physical and mental capabilities, school grades may improve, and the social behavior of the child may become more desirable. Positive changes in the asthmatic child may be related directly to the training method (Butts, 1980).

### Training Method

The training method utilized in the new program combines exercises and illustrations explained by Butts (1980). This is a seven-step method intended to help asthmatics breathe better and easier, control wheezing, and place responsibility for action on self-help discipline. **At** the onset of breathing difficulties, the program teaches children a pattern to follow called "The Seven Steps to Control Wheezing."

Step 1 Medical attending--call the physician or take prescribed medication.

Step 2 Water drinking--fluids help to thin mucus so that it can be loosened and coughed up.

Step 3 Body positioning--during an asthma attack, pillows are used under the scapulas to help the child assume a supportive position. This can be done also in a prone position as on a slant board.

Step 4 Complete breathing--this is a beginner's breathing exercise using the abdominal muscles, pushing up when inhaling, relaxing when exhaling.

Step 5 Alternate breathing--this is done alternating a finger and/or thumb to close one nostril while the other is being used.

Step 6 Diaphragm lifting--this is an advanced breathing exercise used for expelling stale air and coughing up mucus.

Step 7 Positional relaxing--this can be done in the prone position or lying flat.

Lindegren, in a forward for Paige (1979), offered the following assessment:

In **the** practice **of** pediatric medicine, the asthmatic child presents a number **of** problems. The inability **to** breathe makes the child

apprehensive, thereby producing a tenseness of mind and muscle that further aggravates the condition. Breathing becomes labored with shallow rapid respiration. Breathing Exercises for Asthma is fulfilling a great service to the asthmatic child. It is reaching more children by presenting to the parents, school nurses, and teachers, an entirely new way to cope with the problems of these children. In many respects, it is similar to the Lamaze method in childbirth education which is proving so successful. In this case, the child is taught by exercise, breath control, and relaxation to maintain better posture and to breathe more effectively. All of this leads to their being able to cope with their asthmatic episodes (Paige, 1979, p. 60).

#### Evaluation of Training Program

Responses from parents and physicians concerning the general health of asthmatic children who have completed this training have provided positive and encouraging feedback. Butts (1983) conducted a study to assess the program at ABC Unified School District. Parental perceptions were sought through the use of a survey instrument sent to 154 homes. In response to an introductory statement, "I believe that as a result of the respiratory exercise program," 83% of the parents of students currently enrolled in the program stated that their child's breathing condition improved within a few months, and of those 19.2% improved within the first two or four weeks. Other areas examined were: understanding of the respiratory problem, confidence in ability to control wheezing, anxiety, emergency medical attention, school attendance, ability to concentrate, daily medication, performance of exercises at home, and importance of the respiratory exercise program. The results are shown in Table 1.

Table 1

Parental Perceptions of Respiratory Exercise Care Programs

Item	*Responses
1. Child' S breathing condition Improved	83%
2. Child' s understanding of the respiratory problem improved	75%
3. Child's confidence to control wheezing improved	75%
4. Child' s anxiety decreased	83%
5. Child' s emergency medical attention decreased	85%
6. Child' s school attendance improved	51%
7. Child's concentration improved	52%
8. Child' s medication decreased	56%
9. Child utilizes the training at home	75%
10. Respiratory exercise program important	95%

\*n = 154.

In addition, parents' comments about the program were requested. The following are representative of the comments:

I think his breathing condition improved fantastically.

He has learned to help himself and not panic.

I have not driven him to the hospital for emergency treatment in almost a year.

Not worried because I know she can control it.

It has been quite exciting to see him get his wheezing under control, especially after exercise.

He knows how to stop a bad attack.

It's nice not getting up **at 12:00** or **1:00, 2:00, or 3:00** a.m. to go and visit a doctor.

He has missed **only** two days **of** school (September to January).

He has not missed a day due to asthma since beginning the class (two years) .

I believe the program is wonderful. My pediatrician knew immediately that we were part of the ABC district. He also regards your program very highly. My son's attitude has really changed since coming into the class. Asthma isn't one of the big crises that occur in our family anymore. The summation of the data and comments collected in the survey indicated a highly effective adaptation of the respiratory exercise program.

#### Future Directions for the Respiratory Exercise Specialist Program

Further development **of** the respiratory exercise program is anticipated. Studies may be conducted to enhance the respiratory exercise specialist program utilizing children under the direction of a medical school, hospital, or large pediatric clinic having appropriate personnel and equipment to collect the statistical data. In addition, respiratory exercise care seminars for nurses may be conducted similar to those at California State University, Long Beach and **Cerritos** College in California. Development of the program in an allied health department of a community college would appear to be a legitimate and important direction for the health occupations education field.

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