

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

AN EDUCATIONAL INTERVENTION  
FOR CHILDHOOD ASTHMA

A graduate project submitted in partial satisfaction  
of the requirements for the degree of

Master of Public Health

by

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ABSTRACT

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Asthma has been recorded since antiquity. Today, it is one of the most common chronic disorders of childhood. Greater understanding of the disease, coupled with increased therapeutic treatment has led to better management, especially in the area of childhood asthma.

The major purpose of this project was to develop and validate an educational model for parents of young asthmatic children. Three methodological phases of activity were involved in this process: I. An assessment of need; II. Development of an intervention model; and III. Validation of the intervention model.

The needs assessment included a review of the medical charts of children who had been hospitalized for

asthma, and a survey of parents of young asthmatic children. The results of the needs assessment and literature review were utilized in order to develop the educational model.

The model was designed in curriculum format and submitted for validation to selected experts in the fields of childhood asthma and health education. The validators critiqued the curriculum on content, objectives, and utility and provided a framework for improvements. The refined curriculum reflects their suggestions.

The following conclusions were drawn from this project:

1. There is a valid need for educating parents of young asthmatic children regarding medications and management techniques;

2. Current home monitoring techniques are available that would improve self-management of asthma; this rationale was reflected in the intervention model; and,

3. The proposed model was found to be valid and useful by experts in childhood asthma and health education.

It was recommended that educational programs promoting child asthmatic self-management through home monitoring be made available to parents in the San Fernando Valley.

## Chapter 1

### INTRODUCTION

Asthma has been eloquently described since antiquity. In Greek, the word "asthma" denoted panting and was used in reference to shortness of breath. Aretaeus, in the Second Century A.D., wrote: "The lungs suffer and the parts which assist respiration sympathize with them" (18:18). The Roman philosopher Seneca (3-66 A.D.) suffered from asthma and remarked that the doctors called his attacks "an exercise in death" (7:26). Jean Baptiste van Helmont, a Sixteenth Century Belgian physician, compared his own asthmatic attacks to epilepsy when he referred to the disease as "the falling sickness of the lungs" (18:19).

Treatments for this strange affliction date back as early as the ancient Egyptians who recorded ten prescriptions for asthma in the Ebers Papyrus, written about 1550 B.C. The remedies contained such ingredients as honey, fruit of Juniper, and frankincense. The distinguished physician Galen, who had considerable influence on medicine in the Second Century, completely misunderstood the physiology of the heart and lungs, and advocated wine mixed with owl's blood as the cure for asthma. Galen believed the heart was a type of furnace to warm

the body while the function of breathing was to cool this furnace and rid the body of impurities. The true purpose of the lungs was not understood until the latter half of the Eighteenth Century with Lavoisier's research in which he ultimately named oxygen and found it to be necessary for life.

In the Nineteenth Century, while other diseases were being carefully investigated, little progress was made toward understanding asthma. Leffert attributed this relative neglect to a belief in the medical community that asthma was mainly a psychogenic disorder (19).

Researchers in the early Twentieth Century shed some light on this myth with the discovery of anaphylaxis, a type of severe allergic response, which Meltzer in 1910 pointed to as the causative agent in asthma (26). His ideas were widely accepted leading to the "allergic theory" of asthma and elevating asthma into a disease more worthy of medical research.

As medicine progressed toward increasing specialization, however, Meltzer's ideas were challenged and new theories were developed. Hypotheses to explain the etiology of asthma have ranged from allergic response (26), psychoneurosis (15), and immunological defects (33) to prostaglandin imbalance (19), and asthmagenic virus (25) among others.

Presently, the etiology of asthma remains elusive. There is no widely held position as to its nature and origin (19,28). It is possible there is no single cause. Modern physicians might do well to agree with what Maimonides wrote in the Twelfth Century:

This disease has many aetiological aspects ... it cannot be managed without a full knowledge of the patient's constitution as a whole ... furthermore I have no magic cure to report (18:19).

There is no "magic cure" for asthma, but it can be treated. Greater understanding of the disease coupled with sophisticated pharmacological and medical treatment has led to better management of the disorder, especially in the area of childhood asthma. According to Leffert:

Asthma stands almost alone among the chronic diseases of childhood with regard to its high degree of reversibility and its excellent response to proper therapy in the majority of children (19:1061).

In light of the statistics on the occurrence of childhood asthma such optimism is encouraging.

Asthma is one of the most common chronic disorders of childhood affecting, by conservative estimate, five percent of all children under the age of fifteen (12). About 1.6 million visits a year to private physicians are made by children under the age of six owing to asthma-related problems (3). With such young children the brunt of care must necessarily fall onto the parents. Thus, it becomes essential that these parents be included in the

treatment plan. The most critical factor in control and medical management of childhood asthma is compliance with the therapeutic program.

Unfortunately, as with other chronic diseases, compliance with therapeutic treatment in asthma is disturbingly low, resulting in greater numbers of office visits, emergency room use, and hospitalizations. Fireman et al estimated that thirty percent of the admissions related to severe asthma in a children's hospital were due to mismanagement of medical regimen on the part of the patient, the family, or the medical professional (12). Following an educational program for parents and children, which was directed toward self-management, a statistically significant decrease was found in the number of asthmatic attacks, emergency room visits, hospitalizations, and missed school days in the educated population when compared to a matched control group.

Numerous studies (9, 10, 23, 30, 34) have shown that educational intervention in childhood asthma can be an effective method of decreasing severe asthmatic attacks. The most successful programs, regardless of hypothetical basis, were designed with clear learning objectives which met the needs of the specific population receiving the intervention.

### Statement of the Problem

There is clearly a need for a well planned educational and supportive program for the asthmatic child and family if the disease is to be successfully managed. The therapeutic treatment of these children may be complex involving several different medications for symptoms brought on by various precipitating factors. According to Matthews and Hingson (24), compliance decreases as the complexity of medical treatment increases.

Childhood asthma also has an emotional impact on the involved family. Instructions given in the physician's office or in the emergency room during the crisis of an attack may not be well remembered. Often, the feelings and attitudes of the patient and family are ignored and emphasis is placed solely on the physical aspects of the disease (16).

A survey of five hospitals in the San Fernando Valley, by the investigator, revealed an absence of any type of asthma education programs for parents of young children with the disorder. The need for health education intervention is underscored by excessive utilization of emergency and hospital services by young asthmatic patients. Physicians, nurses, and patients have expressed interest in asthma education programs. There is, then, a need for some type of intervention which can

effectively respond to the needs of families with asthmatic children who live in the San Fernando Valley.

### Purpose of the Project

The major purpose of this project was to develop and validate an educational intervention for families with asthmatic children which could be used to reduce the need for unnecessary utilization of emergency services by this population.

### Assumptions

The project was based on the following assumptions:

1. Increased compliance with therapeutic measures reduces the incidence of severe asthmatic episodes in young children. Several studies lend support to this assumption (10, 12, 23, 30, 34).

2. Lack of parental knowledge regarding asthma and lack of structure for decision-making during an asthmatic episode may necessitate greater dependence on emergency services. When the parent feels uncertain and unable to manage the young child during an acute attack, the need for outside intervention is greater (23, 24).

3. Parents can be taught to follow specific steps in managing an asthmatic episode through a well-planned educational intervention (10, 19).

4. Asthma can be an emotionally charged illness impacting on the entire family. Education alone may not be effective unless the educational objectives address the emotional concerns of the participants (10, 16, 20).

5. Medical personnel may not be aware of educational strategies which could effectively communicate management techniques to parents (5, 10, 16).

#### Limitations of the Study

1. The study was primarily limited to the San Fernando Valley and may not be representative of educational needs of parents in other geographic areas.

2. The target population involved in the needs assessment was not randomly selected.

3. Recommendations for the educational intervention are specific for the population involved in the needs assessment. The educational model, however, could be suitable for other parents of young asthmatic children.

## Chapter 2

### REVIEW OF THE LITERATURE

The literature review focuses on two areas pertinent to the development of an educational intervention for childhood asthma. The first section is concerned with the problem of medical compliance and its relevance in asthma. The second section involves an overview of previous educational efforts in asthma with a focus on the most effective elements of the programs.

#### Compliance

Compliance with medical regimen is a critical factor in managing childhood asthma, yet parents do not consistently follow the recommended treatments (6, 12). Undoubtedly, this is a complex problem. Noncompliance has long plagued many areas of medicine, especially in the chronic diseases, with estimates ranging from 30 percent to 60 percent depending on the patient, the disease, the setting, and the treatment (5).

There have been numerous studies in recent years concerning this issue in an effort, by those interested in health education, to define the causes of noncompliance and devise effective strategies to overcome it.

Although no all-encompassing solution has evolved, much practical knowledge has been gleaned from the data. Certain conditions stand out as contributing to noncompliance and are, unfortunately, characteristic of childhood asthma. These include: complexity of the regimen (24), chronicity of the disease (12), duration of treatment (24), inadequate understanding of medical regimen (5), poor doctor-patient relationship (5, 22), and severity of drug side effects (8).

#### Complexity

Asthma easily fits into the above schema for non-compliance. It is a chronic disease, at times requiring prolonged and complex drug therapy. The treatment regimen may involve the initiation or continuation of drugs based on subtle symptoms like shortness of breath, brought on by a variety of precipitating factors over which the parents and child may have little or no control. Baseline medications, even when correctly administered, may be inadequate at times or may need to be adjusted as the child grows (35). A further difficulty is that optimum blood levels of the drugs may not be reached in time to prevent a severe attack if medication is not started early enough. Without specific home monitoring techniques and education regarding asthma, the parent may not be discerning enough to notice symptoms of an

impending attack, nor can the young child easily evaluate his/her physical condition and request medication (10).

Most other chronic diseases of childhood such as heart disease, cancer, diabetes, and arthritis are widely held as being caused by external factors over which the child and family have no control (22). Such is not the case with asthma. French and Alexander's classic 1941 monograph fanned the fires of the psychogenic theory of asthma which still pervades today, especially in the lay community, despite much evidence to the contrary (15). Greer paraphrased Susan Sontag in reference to this problem, saying that she

. . . suggested that the practice of reducing illness to psychological phenomena provides the illusion of control over experiences and events which we, in fact, do not control (10:15).

Furthermore, Sontag stressed, "Psychological understanding undermines the 'reality' of a disease" (32:55).

### Therapeutic Relationship

An atmosphere of censure leads to frustration, poor communication, and low compliance. In reference to treatment of childhood asthma, Lewiston and Bergman noted, "it frequently is implied, tacitly or overtly, that the parents somehow may be responsible for the child's disease" (22:888). The relationship between the physician and the family impacts on disease management.

Ghory identified supportive treatment for the parents and the child as an absolute necessity in asthma treatment (16). Becker and Maimon (1980) found mothers were more compliant when the physician was perceived as understanding and friendly at the outset and referred to Francis et al's findings that

. . . the extent to which patients' expectations from the medical visit were left unmet, lack of warmth in the doctor-patient relation, and failure to receive an explanation of diagnosis and cause of the child's illness were key factors in noncompliance (5:22).

Another contributor to noncompliance within the therapeutic relationship involves prescribed medications. Christensen found that "skepticism" about the usefulness of the medications and the wisdom of the prescribing physician could impact negatively on compliance (8). Studies have shown that parents of asthmatic children are not well informed about the drugs they give to their children. Walsh used a questionnaire to survey families of asthmatic children and reported the responses "showed an overwhelming concern about the frequent use of medications and their long-term effects" (34:28).

Through a person-to-person interview of parents of asthmatic children to determine educational needs, Clark et al unexpectedly found that 46 percent were worried and fearful about side effects of the drugs their children were taking for asthma. Problems related to the

medications were rated higher by the parents than the interviewers had initially predicted. Additionally, nearly half of those interviewed believed too little information regarding their children's illness was provided by the physician.

### Influences on Compliance

Becker and Rosenstock analyzed medication compliance in asthma according to the Health Belief Model, a paradigm for understanding health behavior (6). Asthma was chosen because of the uncertainty associated with medication effectiveness. According to the Health Belief Model, "perceived barriers" to the desired health behavior can negatively affect the behavior. Becker and Rosenstock found that such was true in asthma as they saw a positive relationship between mothers' perception of problems related to drug administration and likelihood of noncompliance. Such problems as the

. . . regimen's disruption of normal activities, relative inaccessibility of places to fill or refill prescriptions, child's complaints about the taste of the medication, and problems with the schedule for administering the medication (6:273)

had a statistically significant correlation with medication noncompliance. Interestingly, it was also found that the compliant mothers were more apt to be mistrustful of physicians, to believe that the doctors were not well informed about asthma, and that the drugs could be

helpful but would not effect a cure in asthma.

The authors observed that such skepticism might not be essentially negative, and that a more realistic attitude about the abilities of those in the medical profession and the therapeutic agents used in treatment might be more conducive to compliance than the expectation of questionless obedience. A more educated patient with a "tempered appreciation" of the field of medicine should be the goal of health education if greater compliance with medical regimen is to be achieved.

#### Predictive Factors

Another view on compliance was provided by Matthews and Hingson's observation that the factors most consistently predictive of compliance were: the type and rationale of the regimen the patient must follow; the patient's belief regarding the illness and its treatment; and certain characteristics of the patient-physician relationship (24). Non-predictive of compliance were: severity of illness; demographic characteristics such as social class, age, ethnic background; and knowledge and understanding of the disease. Such findings underscored the complexity of the problem and indicated that knowledge alone is inadequate for behavior change.

In summary, the literature shows compliance to be a difficult problem in childhood asthma as it is in

other areas of medicine. It is essential to attain an overview of the problem with special consideration for the family's perspective of the disease and the therapeutic regimen. An educational intervention, to be effective, must address those factors which hinder compliance in a realistic way.

### Educational Interventions in Asthma

As the scope of childhood asthma becomes increasingly apparent, more educational interventions are being designed and implemented. The programs have targeted different audiences such as parents alone; parents and children; and school age children depending on the child's age, the setting, and the design of the study. Some programs have been carefully designed research studies, while others have evolved as a result of a direct need felt in the community.

#### Parent Education

An example of a community program was described by Walsh (34). In conjunction with the American Lung Association a support group called "PAK", Parents of Asthmatic Kids, was developed in Massachusetts. Prior to the first meeting, a questionnaire was mailed to 22 families with asthmatic children to determine parental areas of concern. The response from 20 of these families

indicated a great anxiety over the medication and its side effects, along with the desire to learn about the disease process of asthma, its psychological effects on the family, and specific methods for dealing with attacks. Utilizing community and professional resources and focusing on educational interventions and emotional support for the involved families, these issues were addressed in a series of monthly meetings.

This has become an on-going local program with emphasis on topics requested by the parents. As a result of this program, emergency office visits of the involved pediatric practice decreased an average of 69 percent over a twelve month period for the children whose families participated in the program, when compared to the twelve month period preceding the intervention.

#### Family Education

In a carefully designed study, Fireman et al implemented a program teaching self-management skills to asthmatic children and their parents (12). The program involved individual and group sessions with a nurse-educator utilizing health education techniques. Specific skills, as identified by Parcel and Nader (29) for asthma self-management included: 1. observation (of situations which might bring on an attack); 2. discrimination (noticing physical symptoms of an impending attack); 3. communication (talking about how they feel

before and during an attack); 4. decision-making (taking action themselves or getting help when necessary); 5. self-reliance (having a positive attitude about what they could do for themselves). These skills, along with parental behavioral techniques which prompted the child's self-management, were discussed with the parents and the patient. The individual discussions were based on the physician's and the educator's perceptions of the family's needs. Group sessions were used to discuss the various facets of asthma and its management.

Following this individualized educational program, a statistically significant decrease was found in the number of asthmatic attacks, emergency room visits, hospitalizations, and missed school days in the educated population when compared to a matched control group. The cost benefits of such a program are of special significance in that the cost of the educator's time spent in counseling was 50 percent less than the calculated direct costs of emergency room visits and hospitalizations.

#### Disease Management Based on the Family's Perspective

Clark et al (1979) utilized a different theoretical approach for their program in an effort to utilize the basic strengths of the family for disease management rather than providing a program based on the

health provider's perceptions of what the family should know (9). In order to design this type of intervention a thorough needs assessment of the target population, 300 low income Black and Hispanic families with asthmatic children who utilized the same clinic, was conducted. The authors maintained that the needs assessment was essential in order to determine: 1. the information and skills regarding asthma which parents and children believed to be important; 2. knowledge and skill levels of the families prior to the intervention; and 3. the families' frame of reference for self-management.

Twelve categories of self-management behavior, which delineated the problem from the families' perspective were identified through a questionnaire. Significant concerns were also expressed in such areas as medication usage, medication schedules, communication with physicians, and problems within the family such as discipline and sibling arguments. Additionally, the questionnaire addressed the feelings of the caretakers during the child's asthma attack finding that though a little over half felt "confident", over a third felt "desperate, helpless, overwhelmed" (9:289).

As a result of such information, an educational intervention was designed which focused specifically on six themes related to family self-management skills and obstacles. Discussions designed to facilitate development

of family strategies were used in programs offered twice weekly in the clinic setting with a new theme being introduced monthly. To cope with a changing population, a monthly newsletter, detailing the sessions, was also utilized. Since this program is fairly new, no evaluation is available as of yet, but an extensive one is planned. Immediate benefits have been seen, such as increased awareness by the medical and educational staff as to the needs of the population, and the development of a partnership approach to health care. The parents and children seem to have a more positive attitude toward what they can do in managing the disease and their activities related to it.

#### School Based Programs

Not all asthma education programs have been effective. In a pilot study in an elementary school, Parcel and Nader found no significant increase in the health status of the asthmatic children receiving the intervention (29). Because this was a pilot study some problems were expected. The difficulties experienced were related to inadequate preparation, lack of clearly defined classroom learning objectives, and lack of parental involvement.

As a result of this learning experience, a more structured program with increased parental involvement

was implemented over a two year period in eight elementary schools (30). Utilizing a book detailing the skills for asthma self-management described previously in Fireman's study (12), along with role playing and other activities, 40 minute classes were given once a week. There were two phases to the program in different schools over the two year period.

Results of the study showed some increase in knowledge, a greater internal health locus of control, and decreased anxiety regarding illness. The knowledge gain was not as great as had been anticipated and was not constant across all subjects. The most significant gain was seen in locus of control with the children's realization that they could take a more active role in the management of their asthma. The authors believed that children as young as five and six could be taught concepts of self-management and that educational efforts in this area should include both children and their parents.

#### Media Program

Another program, which was unsuccessful, utilized an educational videotape prepared at the University of Toronto (27). Although this program was geared toward adult asthmatics, the results pointed out the basic problem with such a method from a health education viewpoint: failure to actively involve the patient in the

learning process. The subjects were shown a 55 minute videotape covering several aspects of the physiology of asthma, management techniques, and methods of coping with commonly encountered problems. There was no further educational intervention. Pre- and post-testing of the subjects as compared with a matched control showed no long term retention of knowledge and no measurable benefit in their medical status. The authors felt the value of the videotape program could be enhanced by small group discussions.

In conclusion, the most effective programs have assessed the needs of parents and children and directed learning opportunities and management skills toward those needs. Depending on the population's demographics the needs can vary, as can effective intervention techniques. There is a much needed trend toward designing programs from the viewpoint of the patients rather than from that of the health care providers.

The benefits of such programs are far-reaching. Asthma educational intervention can be seen as an effective way to help parents and children cope with a chronic disease. Furthermore, hospitals, health maintenance organizations, and clinics gain cost-benefits by the decreased utilization of emergency and medical services by the educated families.

## Chapter 3

### METHODOLOGY

Regarding the educational needs in asthma, the National Institute of Health Task Force on asthma advised:

An effort to improve the public and professional perception of asthma and to elevate the quality of its management requires delineation of the scope of the problem, consideration of the available approaches, selection of the most promising methods, and determination of educational content (28:162).

These admonitions were incorporated into the methodology utilized in this project.

This Chapter describes the three phases involved in this process: I. Needs Assessment; II. Development of the educational model; and III. Validation of the educational model.

#### I. Needs Assessment

A needs assessment was conducted in order to define the scope of the problem and involved (A) a review of medical charts at Southern California Permanente Medical Group (S.C.P.M.G.) to determine utilization patterns of asthmatic children; and (B) a questionnaire for parents of young asthmatic children distributed through S.C.P.M.G., private physicians, and Holy Cross

Hospital emergency room.

### Medical Chart Review

The education department of Southern California Permanente Medical Group in Panorama City, for several years, considered the implementation of an asthma education program and ultimately was instrumental in sanctioning the medical chart review. Statistics on the number of children being treated for asthma on an emergency basis were difficult to obtain. Since the medical records department coded all hospitalizations by discharge diagnosis, a review of the charts of children with a discharge diagnosis of asthma was chosen as an effective method for assessing the number of children with serious asthmatic problems.

The medical charts of children ten and under who had been hospitalized with a discharge diagnosis of asthma between June and December of 1981 were reviewed in the categories of age, diagnosis, hospitalizations, emergency room usage, and medications (Appendix A). The age range of ten and under was chosen because the program was to be primarily directed toward parents with the belief that education for the family early in the child's life might prevent the development of more serious problems with asthma management in later years.

### Development of the Needs Assessment Questionnaire

A 50 item questionnaire was developed to determine educational needs of parents of young asthmatic children (Appendix B). The first twenty questions pertained to content areas in asthma education and required the parents to rate the degree of usefulness of the topics using a Likert-type scale. The remaining questions involved multiple choice, forced choice (Yes, No, Not Sure), and fill-ins to determine problem areas, parental attitudes and feelings regarding asthma, and baseline demographic data. The questionnaires given out through S.C.P.M.G. included two additional questions pertaining to desire to attend an educational program and convenient times for the intervention.

### Review and Distribution of Questionnaire

The questionnaire was reviewed by several medical specialists in the fields of asthma and health education and revised according to their suggestions. The questionnaire was then distributed in a variety of settings to attain a wide sampling of parents with asthmatic children. In order to include more subjects the age range was increased to those 12 and under.

Parents who were members of S.C.P.M.G. were surveyed through the mail. The names of those surveyed

were obtained through a Respiratory Pediatrician and a Family Practitioner. The questionnaire was also directly administered by nursing staff to other parents as they brought their children in for appointments with the private physicians who had consented to participate in the study. Parents who sought treatment in the emergency room of Holy Cross Hospital were also included. The criteria for filling out the questionnaire by the parent were that the child be diagnosed by the physician as asthmatic and be in the age range of 12 or under. The parents were asked to sign a form which explained the study and gave consent to act as a research subject (Appendix C).

#### Analysis of Questionnaire Data

A total of 26 questionnaires were collected. The data from the questionnaires was summarized in the form of frequencies and means. The responses to questions 1-20 pertained to content areas in asthma education and required the parents to rate the degree of usefulness of the topics using a Likert-type scale of 1-5 with 5 being highest. The scores for each topic were summated and then ranked to determine highest rated categories (Appendix D). Simple frequencies were obtained for the remaining questions to determine problem areas and population demographics.

## II. Development of the Educational Intervention Model

### Content

The results of the needs assessment and the literature review were utilized in the design and development of the educational intervention model. Resource material from the American Lung Association and the National Asthma Center/National Jewish Hospital in Denver, Colorado provided the major basis for the content information.

In reviewing the literature on asthma education programs it was readily apparent that parental perception of needs was seldom a factor for consideration in the design of educational interventions. Clark, et al pointed out as a basis for their needs assessment that ". . . teaching is especially effective when it provides the knowledge and skills most immediately relevant and useful to the learners" (9:279).

The results of this project's needs assessment emphasized the parent's perceptions of the type of information which would be most relevant and useful to them. The educational model was, to a large extent, based upon these perceptions in conjunction with current scientific thinking about asthma therapy.

### Format

The intervention model was organized in the format of a curriculum utilizing the ". . . systematic structuring and organizing of health knowledge" proposed by Fodor and Dallas (13:26). They advocated the use of concepts or abstractions along with measurable instructional objectives as the best method for synthesizing and organizing data.

The concepts are precise, valid statements which are nonprescriptive yet broad enough to allow organization of content areas appropriately geared to the demographics of the learners (13:29). The instructional objectives provide a specific framework for the behavior sought in the learners along with the means for evaluation. The objectives can, furthermore, be used to evaluate the instructor's effectiveness in facilitating the learners' achievement of the desired goals.

Evaluation is a key component of any educational model and should be an ongoing process throughout a program. It was not deemed within the scope of this project to formulate the specific evaluative components which would accompany the educational intervention.

Validation of the Educational  
Model

The curriculum was validated by selected experts in the fields of childhood asthma and health education. Each received a cover letter and a questionnaire (Appendices E, F). The validators were asked to critically analyze and rate the model in regard to content, objectives, and utility. A validation questionnaire with a Likert-type rating scale and space for comments was used as the rating instrument. The purpose of such a scale, according to Kerlinger, is to place the individual responses on an agreement continuum (17:496).

Seven individuals were asked to evaluate the curriculum. These evaluators were drawn from a variety of fields related to asthma and education in order to obtain a broad analytical perspective. The panel included: Assistant Professor of Pediatrics, UCLA School of Medicine, Pediatric Asthma Clinic; Clinical Instructor of Pediatrics, UCLA School of Medicine, Pediatric Asthma Clinic; Counseling Intern, UCLA School of Medicine, Pediatric Asthma Clinic; Professor Health Science and Program Director, Respiratory Therapist Program, Los Angeles Valley College; Professor, Health Science and Clinical Coordinator, Respiratory Therapist Program, Los Angeles Valley College; Community Education Director, Northridge Hospital Medical Center; and Program

Coordinator, American Lung Association of Los Angeles  
County (Appendix G).

## Chapter 4

### RESULTS AND DISCUSSION

This Chapter presents the results of the medical chart review, the needs assessment, and the curriculum validation. Implications for the educational intervention are also presented.

#### Medical Chart Review

The review of the medical charts at Southern California Permanente Medical Group revealed that 33 children (7 girls and 26 boys) who met the criteria had been hospitalized for asthma within the six month survey period. An average length of stay of 1.7 days was reported (Appendix A). Sixty-six percent of the children were six years of age or under. The mean for previous hospitalizations was 3.6 with a range from one to sixteen prior admissions.

Emergency outpatient treatment of these children ranged from 0 to 44 visits within the time span covered by the children's usage of the Panorama City facility. The emergency visits usually involved an asthmatic crisis severe enough to necessitate injections of a rapid acting bronchodilator. Other conditions, common in young children, such as ear infections, viral upper respiratory

infections, sinusitis, and pneumonia were listed as diagnoses with the asthma. Some children were brought in for emergency treatment three times within a 24 hour period, finally resulting in hospitalization.

The chart review revealed a need for direct educational intervention with the parents of the very young asthmatic since two-thirds of the surveyed children were six or under. There also appeared to be a great need to include home-management and home monitoring techniques, as opposed to physician-based interventions, in such an intervention program. It is strongly suggested that such an approach is necessary in order to reduce the number of children reaching the crisis state in their asthma which necessitates repeat emergency treatments.

### Needs Assessment Questionnaire

#### Survey Population Demographics

The parents ranged in age from 24-55 with a mean of 32 years. They had an average of thirteen years of education ranging from as little as six years to over seventeen. The mean age of the children was six.

Regarding severity of asthma the parents rated 13 (50%) of the children as moderate, 7 (27%) as severe, and 6 (23%) as mild. More children (54%) took medication occasionally with 46 percent on daily medicine. Ten of

the children (39%) had been hospitalized at some time for asthma with a range of from one to five hospitalizations.

#### Content Areas

Parents invariably rated knowledge about proper administration of medications as most useful to them in coping with their children's asthma. The two items "The reason why certain drugs were prescribed" and "How safe the drugs are" were rated as most critical (Appendix D). This correlated with Walsh's (34) survey findings of an overwhelming parental concern with asthma medications and long-term drug effects. Clark et al (9) also found that 46 percent of the parents they surveyed were quite worried about drug side effects.

These items were followed in rank order by "When to start the medication" and "What I should do when my child starts wheezing." The results of the ratings underscored the parents' need for greater knowledge about medications used; for decision-making protocols about when to administer the drugs; and, for methods of coping with the emotional aspects of the child during an asthmatic episode. In contrast, parents showed the least interest in "What asthma is", and "How to help myself relax during my child's asthma attack" -- the two lowest scoring items in the survey.

### Specific Problems

Over half (52%) of the parents surveyed indicated hyperactivity was a significant problem related to the medicine and a nearly two-thirds (62%) reported difficulty in taking care of the child during an episode of asthma. Slightly more than one-fourth (27%), however, indicated that the child's asthma had negative effects on the family.

According to the parents, weather (88%) and infections (76%) were primary factors in triggering episodes, which showed good awareness of antecedent conditions. Wheezing was chosen most frequently (88%) as the sign of an asthma attack followed by frequent coughing (72%).

In contrast, parents showed much greater hesitancy about how to respond during the initial stages of an episode. Fifty-four percent chose to start the medicine immediately, 20 percent brought the child in to see the doctor, 16 percent waited to see if the child would clear up without medication, and only 10 percent called the doctor.

Slightly over half (54%) of those surveyed felt they did not have enough knowledge of asthma to play an active role in management of the child's asthma, and yet 85 percent reported giving the medications at the appropriate times. This discrepancy may be explained either

by the parents' lack of knowledge about what is the appropriate time, or by parents' defensiveness over their management skills. Only 27 percent of the parents blamed themselves when their child had a severe attack suggesting that the majority of parents do not view asthma as a controllable disease, thus underscoring the idea that they lack knowledge.

Most parents (88%) were satisfied with the medical treatment the child was receiving. Most (81%) also indicated correctly that asthma was not a psychosomatic disease, but 80 percent believed incorrectly that it was not possible to keep an asthma attack from occurring.

In summary, the vast majority of parents indicated a specific need for reliable objective criteria for drug administration, accurate information about the medication interaction and side effects, and specific management techniques for coping with the emotional ramifications of the disease.

#### Curriculum Validation

The results of the medical chart review and the parental needs assessment were instrumental in dictating the educational intervention design. A curriculum on asthma was designed for parents of young asthmatic children. This curriculum was then submitted for evaluation to experts in the field of asthma and health education.

The seven individuals who were selected to be evaluators received a validation questionnaire (Appendix F) with a draft of the curriculum. Each was requested to comment, refine the draft, and to complete the validation questionnaire. One hundred percent of the respondents completed the questionnaire.

The validation questionnaire contained seven questions regarding the curriculum with a rating scale from 1 to 6, and space for comments. The majority of the ratings were consistently at the top end of the scale within the range of moderately high "4" or high "5", except in the instances deemed not applicable "6".

The first four questions were concerned with content. Question 1 asked if the content was appropriate for parents of young asthmatic children. All of the evaluators indicated the content was appropriate: four respondents (57%) rated it high, and three (43%) rated it moderately high. There were suggestions for increased two-way communication in the first two sections and for greater emphasis on the content concerning home monitoring presented in the last two sections.

Question 2 asked if the content was factual. Two respondents (28.5%) gave this a high rating, two (28.5%) gave it a moderately high rating and three of the evaluators (43%) felt this was not applicable to them. It was pointed out that some of the content regarding

medications, taken from the resource material, was outdated. Recommendations for additional content were made and were incorporated, along with the medication revisions, into the revised model.

Question 3 asked if the content was organized in a useful manner. All indicated that this was so, four respondents (57%) rated it as high and three (43%) rated the organization as moderately high. Evaluators also made some suggestions regarding the need for clearer organization of content. These suggestions were added to the revised model. Generally, all of the evaluators expressed positive acceptance for the schema of topics, concepts, content, and objectives.

Question 4 addressed the capability of the curriculum content to provide the parents with the skills for taking an active role in managing the child's asthma. Three of the evaluators (43%) rated it high, three (43%) rated it moderately high, and one evaluator (14%) rated it moderate in this area. The comments centered on the need to incorporate more parent involvement into the learning opportunities, and to increase the focus on home monitoring.

The remaining questions pertained to the general usefulness of the curriculum. Question 5 asked if the learning objectives were adequate. Three evaluators (43%) ranked them as high, three (43%) as moderately high, and

one (14%) indicated this was not applicable -- wondering when the evaluation was to take place. Pre- and post-testing of the participants would need to be included in the implemented curriculum.

Question 6 asked if this was an effective method for educating parents. Four evaluators (57%) rated it high, two (29%) rated it moderately high and one (14%) rated it "Not Applicable" with the comment that it appeared effective, but evaluation would be a more reliable assessment tool as to results.

The final question asked if the evaluators would use the curriculum in their facilities. Three (43%) gave this a high rating, two (28.5%) gave it a moderately high rating and the remaining two (28.5%) indicated this was not applicable to them as they were not in a position to use it.

In summary, the consensus of the evaluators in the validation process was that the curriculum model for parents of young asthmatic children could be considered useful. It was found to be well organized, with appropriate educational objectives. Generally, it was thought to be useful in the primary goal of increased home management techniques in order to reduce the incidence of unnecessary utilization of emergency services. The comments and suggestions provided by the evaluators were utilized as insightful additions to the revised curriculum.

## Chapter 5

### THE REFINED CURRICULUM MODEL

This Chapter presents the refined curriculum model which reflects the results of the needs assessment, the literature review, and the validation process. Whenever possible, the input from the validation experts was incorporated into the model.

The curriculum design was based on the survey population demographics. The parents had an average educational level of one year of college and an asthmatic child approximately six years of age.

The intervention would occur in four weekly sessions lasting approximately two hours each. The first, second, and fourth segments would be taught by a skilled instructor in asthma education. The second segment, concerning medications, would best be taught by a physician who specialized in the treatment of asthma and who was familiar with the medications currently in use.

The Refined Curriculum Model for  
Parents of Asthmatic Children

I. Anatomy and Physiology of the Lungs

Concept 1: Asthma is an intermittent, reversible, obstructive airway disease.

Objective 1.1: Identify the basic anatomical structures in the lungs used during respiration.

Objective 1.2: Explain the changes which occur in the lungs during an asthmatic state.

Objective 1.3: Describe the physical symptoms which accompany the child's asthmatic episode.

Evaluation: Identify the basic structures in the lungs which form the pathway for gas exchange during respiration.

Explain three changes which occur in the lungs during an asthmatic state.

Describe physical symptoms specific to the child during an asthmatic episode.

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CONTENT

SUGGESTED LEARNING  
OPPORTUNITIES

Introduction to Program

- A. Concept of Asthma
- B. Purpose of Program
- C. Topics
- D. Desired Outcomes

Instructor discusses concept of asthma, purpose of program, topics to be covered, and desired outcomes.

## I. Anatomy and Physiology of the Lungs

Concept 1: Asthma is an intermittent, reversible, obstructive airway disease.

Objective 1.1: Identify the basic anatomical structures in the lungs used during respiration.

Evaluation: Identify the basic structures in the lungs which form the pathway for gas exchange during respiration.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<p>I. To understand what happens in an asthmatic lung, it is necessary to consider the functions of a normal lung.</p> <p>A. The main purpose of the lungs is respiration; an exchange of gases in which oxygen passes into the lungs and carbon dioxide passes out.</p> <ol style="list-style-type: none"> <li>1. Nose - warms, filters and humidifies air</li> <li>2. Trachea - pathway for air, lined with cilia</li> <li>3. Bronchi left and right               <ol style="list-style-type: none"> <li>a. Wrapped by muscles</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Each participant is given a diagram of the normal lung and asked to label structures and take notes.</li> <li>2. The instructor discusses respiration using a large diagram of the lungs to illustrate the structures.</li> </ol>

## RESOURCES

American Lung Association. What Everyone Should Know About Asthma. 1977.

Leffert, Fred. Your Child And Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

## I. Anatomy and Physiology of the Lungs

Concept 1: Asthma is an intermittent, reversible, obstructive airway disease.

Objective 1.1: Identify the basic anatomical structures in the lungs used during respiration.

Evaluation: Identify the basic structures in the lungs which form the pathway for gas exchange during respiration.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
b. Lined by membrane (mucosa) similar to that in mouth	
c. Contain glands in wall which normally produce mucous in small amounts (except during viral infections)	
4. Bronchioles - smallest of airway passages, open into alveoli	
5. Alveoli - small elastic sacs, balloon-like, surrounded by capillaries (small blood vessels)	

### RESOURCES

American Lung Association. What Everyone Should Know About Asthma. 1977.

Leffert, Fred. Your Child And Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

I. Anatomy and Physiology of the Lungs

Concept 1: Asthma is an intermittent, reversible, obstructive airway disease.

Objective 1.2: Explain the changes which occur in the lungs during an asthmatic state.

Evaluation: Explain three changes which occur in the lungs during an asthmatic state.

CONCEPT	SUGGESTED LEARNING OPPORTUNITIES
<p>B. Exchange of gases takes place across the membrane separating alveoli from capillaries.</p> <p>1. Oxygen breathed into the lungs during inspiration is absorbed into blood stream</p> <p>2. Carbon dioxide from blood passes into alveoli and out the bronchial tree during expiration</p>	<p>3. Participants note their own breathing techniques by inhaling and exhaling with hand below ribs.</p>
<p>II. The asthmatic lung has excessive bronchial irritability.</p> <p>A. The cause may be genetic.</p> <p>B. It may be secondary to a viral infection during first 12-18 months of life.</p>	<p>1. Instructor discusses theories regarding cause of excessive bronchial irritability</p>

RESOURCES

Leffert, Fred. Your Child and Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

## I. Anatomy and Physiology of the Lungs

- Concept 1: Asthma is an intermittent, reversible, obstructive airway disease.
- Objective 1.2: Explain the changes which occur in the lungs during an asthmatic state.
- Evaluation: Explain three changes which occur in the lungs during an asthmatic state.

### CONTENT

### SUGGESTED LEARNING OPPORTUNITIES

- |  |  |
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| <p>C. Sometimes called "twitchy tubes" because of increased sensitivity which causes lung changes.</p> <p>1. Bronchospasm, tightening of muscles around bronchial tubes results from some type of irritant to lungs (very commonly viral U.R.I.) which triggers certain reactions.</p> <p>a. Diameter of bronchus is narrowed</p> <p>b. Mucosa becomes swollen and inflamed</p> <p>c. Clearance of mucous is impaired by narrowed airways and inability to produce effective cough</p> <p>d. Wheezing sound comes from vibrations resulting from forcing</p> | <p>2. Each participant is given a diagram of a lung in an asthmatic state to label and compare differences to normal lung.</p> <p>3. A balloon is used to demonstrate normal bronchials by slowly letting air out.</p> <p>4. Straws are used to illustrate how it feels to breathe through a constricted bronchial tree. The participant breathes rapidly in and out</p> |
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### RESOURCES

Leffert, Fred. Your Child And Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

## I. Anatomy and Physiology of the Lungs

Concept 1: Asthma is an intermittent, reversible, obstructive airway disease.

Objective 1.2: Explain the changes which occur in the lungs during an asthmatic state.

Evaluation: Explain three changes which occur in the lungs during an asthmatic state.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<p style="text-align: center;">air out through the narrowed airways, clogged with mucous</p> <p>2. Auxiliary muscles are used to force air through constricted bronchial tree</p> <p>a. Little effort is needed for breathing in a normal lung</p> <p>b. During an asthmatic episode chest, shoulder, and neck muscles are used to force air in and out of lungs</p>	<p style="text-align: center;">through a straw in the mouth.</p> <p>5. Instructor elicits discussion as to how it feels to be in an asthmatic state</p>
<p>D. Physical symptoms result from lung changes.</p> <p>1. Persistent and ineffectual coughing is triggered by irritating secretions and may be more symptomatic, in some children, of an attack than wheezing</p>	

## RESOURCES

Leffert, Fred. Your Child and Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

## I. Anatomy and Physiology of the Lungs

Concept 1: Asthma is an intermittent, reversible, obstructive airway disease.

Objective 1.3: Describe the physical symptoms which may accompany the child's asthma

Evaluation: Describe the physical symptoms specific to the child during an asthmatic episode.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<ul style="list-style-type: none"> <li>2. Chest retractions are the result of labored breathing</li> <li>3. Sweating, fatigue, irritability are also seen</li> </ul>	
<p>E. An asthmatic episode may range from mild to severe.</p> <ul style="list-style-type: none"> <li>1. It may develop at any time but most likely to occur with a viral U.R.I., during exercise, at night</li> <li>2. It may develop slowly or appear to come on suddenly</li> <li>3. An episode involves difficulty in breathing</li> </ul>	<ul style="list-style-type: none"> <li>6. Instructor leads discussion of what constitutes an asthmatic episode.</li> <li>7. Instructor discusses "sudden" onset as actually being gradual worsening of asthma which patient/parent</li> </ul>

### RESOURCES

Leffert, Fred. Your Child and Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

Saltman, Jules. Asthma-Episodes and Treatment. Public Affairs Committee Pamphlet, No. 608. New York, 1982.

I. Anatomy and Physiology of the Lungs

Concept 1: Asthma is an intermittent, reversible, obstructive airway disease.

Objective 1.3: Describe the physical symptoms which may accompany the child's asthma.

Evaluation: Describe the physical symptoms specific to the child during an asthmatic episode.

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CONTENT	SUGGESTED LEARNING OPPORTUNITIES
with main problem being getting air out of the lungs.	may not be able to appreciate without use of home monitoring techniques.

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RESOURCES

Leffert, Fred. Your Child and Asthma. Department of Pediatrics. National Jewish Hospital/National Asthma Center.

Saltman, Jules. Asthma-Episodes and Treatment. Public Affairs Committee Pamphlet, No. 608. New York, 1982.

## II. Treatment of Asthma

Concept 2: Appropriate medication compliance can reduce the incidence of severe asthmatic episodes.

Objective 2.1: State the reasons for the use of medications in the treatment of asthma.

Objective 2.2: Identify the four major types of medications used in asthma therapy and determine into which category the child's medications belong.

Evaluation: State at least two reasons for the use of medications in the treatment of asthma.

Identify four major types of asthma medications and place the child's medications into the appropriate category.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<p>I. Asthma is a serious disease, but it is treatable and episodes can almost always be prevented.</p> <p>A. There may be many causes for asthma, so the aim of treatment is to control the disease and allow the child to lead a normal life.</p> <p>B. Two main ways to treat asthma are medications and environmental control of triggers.</p>	<p>1. Physician discusses asthma as a disease.</p> <p>2. Physician lectures on medications while showing transparencies with overhead projector to illustrate medication information.</p>

### RESOURCES

American Lung Association. How To Control Asthma.  
Newsmagazine from "Superstuff," 1981.

## II. Treatment of Asthma

Concept 2: Appropriate medication compliance can reduce the incidence of severe asthmatic episodes.

Objective 2.2: Identify the four major types of medications used in asthma therapy and determine into which category the child's medications belong.

Evaluation: Identify four major types of asthma medications and place the child's medications into the appropriate category.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<p>II. There are four major types of medications for asthma.</p> <p>A. Theophylline</p> <ol style="list-style-type: none"> <li>1. Most commonly used medication for asthma</li> <li>2. Bronchodilator - relaxes muscles surrounding bronchial tubes</li> <li>3. Effects last 4-12 hours depending on blood concentration and form of medicine.               <ol style="list-style-type: none"> <li>a. Syrups, suspensions last 4-6 hours</li> </ol> </li> </ol>	<p>3. Parents are encouraged to discuss medications their children are taking along with problems encountered.</p>

### RESOURCES

American Lung Association. How To Control Asthma. Newsmagazine from "Superstuff," 1981.

Leffert, Fred. Your Child and Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

## II. Treatment of Asthma

- Concept 2: Appropriate medication compliance can reduce the incidence of severe asthmatic episodes.
- Objective 2.2: Identify four major types of medications used in asthma therapy and determine into which category the child's medications belong.
- Evaluation: Identify four major types of asthma medications and place the child's medications into the appropriate category.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
b. Sustained-release tablets or capsules last 8-12 hours	
4. Necessary to administer appropriately in order to reach effective blood concentration levels	
5. Common forms: regular-acting - Aminophyllin, Somophyllin; sustained-release - Theo-Dur, Slo-Phyllin	4. Parents are given hand-out of drugs used in asthma therapy.
6. Common side effects may occur when dose is too high a. Stomach ache	

## RESOURCES

Leffert, Fred. Your Child and Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center

## II. Treatment of Asthma

- Concept 2: Appropriate medication compliance can reduce the incidence of severe asthmatic episodes.
- Objective 2.2: Identify four major types of medications used in asthma therapy and determine into which category the child's medications belong.
- Evaluation: Identify four major types of asthma medications and place the child's medications into the appropriate category.

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CONTENT	SUGGESTED LEARNING OPPORTUNITIES
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- b. Nausea with or without vomiting or loss of appetite
- B. Adrenalin-like drugs.
  - 1. Epinephrine
    - a. Powerful bronchodilator given by injection for emergency use only
    - b. Rapid effects last 15-60 minutes
    - c. Side effects; increased heart rate, blanching of skin, headache, nervousness, nausea, vomiting

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### RESOURCES

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Leffert, Fred. Your Child And Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

## II. Treatment of Asthma

- Concept 2: Appropriate medication compliance can reduce the incidence of severe asthmatic episodes.
- Objective 2.2: Identify four major types of medications used in asthma therapy and determine into which category the child's medications belong.
- Evaluation: Identify four major types of asthma medications and place the child's medications into the appropriate category.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<p>2. Isoetharine (Bronkosol), Metaproterenol (Alupent)</p> <ul style="list-style-type: none"> <li>a. Can be given by inhalation</li> <li>b. Danger is overuse</li> <li>c. Rapid action (1-5 minutes) reinforces efficacy and convenience</li> <li>d. Extra doses may be absorbed systematically to produce cardio-vascular side effects</li> </ul> <p>3. Ephedrine</p> <ul style="list-style-type: none"> <li>a. Less potent, but can be taken orally</li> </ul>	<p>5. Physician discusses potential for overuse of rapid acting aerosol bronchodilators.</p>

### RESOURCES

Leffert, Fred. Your Child And Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

## II. Treatment of Asthma

Concept 2: Appropriate medication compliance can reduce the incidence of severe asthmatic episodes.

Objective 2.2: Identify four major types of medications used in asthma therapy and determine into which category the child's medications belong.

Evaluation: Identify four major types of asthma medications and place the child's medications into the appropriate category.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<ul style="list-style-type: none"> <li>b. Usually combined with other drugs and called Tedral, Marax, Verquad</li> <li>c. Side effects: nervousness, irritability, increased heart rate</li> <li>4. Terbutaline (Brethine, Bricanyl), Metaproteranol (Alupent)               <ul style="list-style-type: none"> <li>a. Given by mouth</li> <li>b. Less effect on heart</li> </ul> </li> <li>C. Cromolyn Sodium (Intal, Aarane)               <ul style="list-style-type: none"> <li>1. Powder or liquid inhaled by nebulizer</li> <li>2. Reduces lungs' reaction to asthmatic triggers (acts on mast cells)</li> </ul> </li> </ul>	

### RESOURCES

Leffert, Fred. Your Child And Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

## II. Treatment of Asthma

- Concept 2: Appropriate medication compliance can reduce the incidence of severe asthmatic episodes.
- Objective 2.2: Identify the four major types of medications used in asthma therapy and determine into which category the child's medications belong.
- Evaluation: Identify four major types of asthma medications and place the child's medications into the appropriate category.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
3. No benefit if swallowed or taken after asthma begins 4. May cause momentary coughing	
D. Steroids 1. Very effective in severe asthma (mechanism of action is related to inhibition of release of mediators from lung cells) 2. Related to cortisone, hormone produced by adrenal glands 3. Side effects can be serious - must be closely supervised	6. Physician summarizes reasons for use of medications in asthma.

### RESOURCES

Leffert, Fred. Your Child And Asthma. Department of Pediatrics, National Jewish Hospital/National Asthma Center.

## II. Treatment of Asthma

Concept 2: Appropriate medication compliance can reduce the incidence of severe asthmatic episodes.

Objective 2.3: Given a situation involving medication side effects, discuss corrective measures which could be taken.

Evaluation: Given a situation involving medication side effects, discuss the corrective measures which could be taken based on the criteria discussed in the class.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
4. Common forms: Prednisone, Medrol, Vanceril	
III. There are parental responsibilities when a child is on medication.	1. Physician discusses rationale for home-monitoring.
A. Medications need to be given according to instructions.	2. Group discusses side effects and problems with medications.
B. Medications are effective only when being taken appropriately.	
1. Home monitoring is best way to determine "appropriate"	3. Physician leads group discussion,

## RESOURCES

American Lung Association. How To Control Asthma.  
Newsmagazine from "Superstuff", 1981.

Creer, Thomas L. Asthma Therapy: A Behavioral Health Care System for Respiratory Disorders. New York: Springer Publishing Co., 1979.

## II. Treatment of Asthma

Concept 2: Appropriate medication compliance can reduce the incidence of severe asthmatic episodes.

Objectives 2.3: Given a situation involving medication side effects, discuss corrective measures which could be taken.

Evaluation: Given a situation involving medication side effects, discuss the corrective measures which could be taken based on the criteria discussed in the class.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
2. May need to be reassessed by trial and error.	using specific examples, on what to do if side effects occur.
C. Side effects should be noted.	
1. Watch child for signs of side effects	
2. Write problems down	

### RESOURCES

American Lung Association. How To Control Asthma.  
Newsmagazine from "Superstuff", 1981.

Creer, Thomas L. Asthma Therapy: A Behavioral Health Care System for Respiratory Disorders. New York: Springer Publishing Co., 1979.

### III. How To Control Asthma

Concept 3: Specific behavioral measures can be taken to reduce the incidence of severe asthmatic episodes.

Objective 3.1: Describe two methods of assessing the child's respiratory status.

Evaluation: Accurately describe two methods for assessing the child's respiratory status.

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CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<p>I. Specific measures can be taken by parents to help the asthmatic child.</p> <p>A. There are methods of assessing the child's respiratory status.</p> <p>1. Mini-Wright Peak Flow Meter gives a reliable estimate of pulmonary function.</p> <p>a. Measures peak expiratory flow rate (PEFR)</p> <p>b. Children can learn to use it</p> <p>c. Useful tool - develops ability to assess own pulmonary status</p>	<p>1. Instructor explains pulmonary function and use of Mini-Wright Peak Flow Meter.</p> <p>2. Instructor demonstrates use of Peak Flow Meter, parents have opportunity to practice.</p> <p>3. Examples of home monitoring graphs are shown to parents.</p>

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#### RESOURCES

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Creer, Thomas L. Asthma Therapy: A Behavioral Health Care System for Respiratory Disorders. New York: Springer Publishing Co., 1979.

### III. How To Control Asthma

Concept 3: Specific behavioral measures can be taken to reduce the incidence of severe asthmatic episodes.

Objective 3.1: Describe two methods of assessing the child's respiratory status.

Evaluation: Accurately describe two methods for assessing the child's respiratory status.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
d. Costs relatively little	
2. Special whistle can be used by younger children.	4. Instructor explains and demonstrates whistle
a. Force needed to make sound can be adjusted	
b. Can be used by 4-6 year olds	
3. Stethoscope can be used by parent.	5. Use of stethoscope is demonstrated and discussed.
4. Parent can put ear to child's back.	
a. Listen for whistles, wheezes	6. Listening technique is demonstrated.
b. If there are no sounds and the child is having breathing difficulty, notify M.D. immediately	

### RESOURCES

American Lung Association. How To Control Asthma.  
Newsmagazine from "Superstuff", 1981.

### III. How To Control Asthma

- Concept 3: Specific behavioral measures can be taken to reduce the incidence of severe asthmatic episodes.
- Objective 3.2: Cite the common triggers to asthma and determine which might apply to the child.
- Evaluation: Cite at least four common triggers to asthma and appropriately determine which might apply to the child.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
5. Look for visable signals: sweating, unusual paleness, flared nostrils, constricted pupils, anxious or scared look, hunched over posture, restlessness.	
B. Note child's sensitivities.	
1. Viral infections (colds tonsillitis, sore throat)	7. Parents are asked to define "triggers" to asthma, instructor refines their responses.
2. Lung Irritants (smoke, smog, paint and paint thinners, hair sprays, perfume, cleaning fluids, bleach, spray starch, dust, room deodorizers, spray furniture polish).	8. Parents discuss what they have observed about triggers to their child's asthma.
3. Weather (weather related changes causing inhalant triggers: Santa Ana winds-pollen, humidity-mold; cold dry air).	

### RESOURCES

American Lung Association. How To Control Asthma.  
Newsmagazine from "Superstuff", 1981.

### III. How To Control Asthma

- Concept 3: Specific behavioral measures can be taken to reduce the incidence of severe asthmatic episodes.
- Objective 3.2: Cite the common triggers to asthma and determine which might apply to the child.
- Evaluation: Cite at least four common triggers to asthma and appropriately determine which might apply to the child.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
4. Allergies (foods: nuts, peanut butter, eggs, milk, fish; plant products: pollens from flowers, trees, grasses, hay, ragweed, mold, spores; animals: rabbits, cats, dogs, birds, hamsters, gerbils, chickens).	9. Instructor, using blackboard, demonstrates idea of behavioral chain to monitor events leading up to asthmatic episode.
5. Overexertion -exercise induced asthma.	
6. Excitement, emotions.	
7. Nighttime - lying flat.	
C. Journal can be useful in home monitoring.	
1. Use small notebook	
2. Write down date, time, place, what child was doing when asthma symptoms	

### RESOURCES

American Lung Association. How To Control Asthma.  
Newsmagazine from "Superstuff", 1981.

### III. How To Control Asthma

Concept 3: Specific behavioral measures can be taken to reduce the incidence of severe asthmatic episodes.

Objective 3.3 Discuss measures to be taken to reduce the incidence of the child's severe asthmatic episodes.

Evaluation: Discuss two measures which could be taken to reduce the incidence of the child's severe asthmatic episodes.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<p>started, what cause might have been</p> <p>3. Keep medication page; name, dose, date started, cost, side effects that occur.</p> <p>4. Bring to M.D.'s office for questions and instructions.</p> <p>5. Bring to emergency room and hospital to record what happened, drugs given, instructions for home care.</p> <p>D. Parents can help the child through an asthmatic episode.</p> <p>1. Give medications appropriately.</p>	<p>10. Parents are shown sample journals. They are asked to write in first entries from past events by child, and discuss.</p> <p>11. Instructor elicits discussion regarding usefulness of journal.</p> <p>12. Parents describe what they generally do during child's asthma.</p>

### RESOURCES

American Lung Association. How To Control Asthma.  
Newsmagazine from "Superstuff", 1981.

### III. How To Control Asthma

- Concept 3: Specific behavioral measures can be taken to reduce the incidence of severe asthmatic episodes.
- Objective 3.4: Summarize steps that could be taken during the child's asthmatic episode.
- Evaluation: Appropriately summarize steps that could be taken during the child's asthmatic episode.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
2. Stay calm and helpful. <ul style="list-style-type: none"> <li>a. Be reassuring to child</li> <li>b. Give firm directions</li> <li>c. Talk to child</li> </ul> 3. Help child to relax <ul style="list-style-type: none"> <li>a. Teach relaxation exercises</li> <li>b. Coach basic deep breathing/abdominal breathing</li> </ul> 4. Contact physician if condition seems to be getting worse.	Problem areas are explored through role-playing. Instructor summarizes helpful techniques. 13. Parents are given handout on exercises and perform them with instructor. 14. Instructor demonstrates how to teach the child.

### RESOURCES

- American Academy of Pediatrics. Captain Wonderlung Breathing Exercises for Asthmatic Children, P.O. Box 1034, Evanston, Illinois, 1979.
- American Lung Association. How To Control Asthma. Newsmagazine from "Superstuff", 1981.

#### IV. Coping With A Child With Asthma

Concept 4: Asthma can have a variety of effects on the child and the family.

Objective 4.1: Discuss the effects of asthma on the child.

Evaluation: Discuss two physical and two psychological effects of asthma on the child.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<p>I. Asthma is a physical not a psychological disease, but it may have psychological implications.</p> <p>A. Physical effects of asthma.</p> <ol style="list-style-type: none"> <li>1. Growth may be affected in severe, poorly controlled asthma</li> <li>2. No apparent permanent lung or heart damage occurs</li> <li>3. Exercise - induced attacks may cause child to curtail activities               <ol style="list-style-type: none"> <li>a. Plan realistic exercise program</li> <li>b. Encourage physical education</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Instructor discusses effects of asthma on the child.</li> <li>2. Film "A Regular Kid" is shown.</li> <li>3. Parents discuss reaction to film.</li> </ol>

#### RESOURCES

American Lung Association. "A Regular Kid." 15 minute film.

Leffert, Fred. Your Child And Asthma. Department of Pediatrics. National Jewish Hospital/National Asthma Center.

#### IV. Coping With A Child With Asthma

Concept 4: Asthma can have a variety of effects on the child and the family.

Objective 4.2: Evaluate the impact the child's asthma has had on the family.

Evaluation: Evaluate, based on the class discussion, the impact the child's asthma has had on the family.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
B. Psychological effects of asthma.	
1. Misconception that asthma is psychosomatic.	
2. Poorly managed asthma can have psychological ramifications: feelings in child of anger, fear, inferiority, depression	4. Instructor leads discussion of the impact of asthma on the family.
3. Disease can magnify other family problems	
4. Behavior problems can result from lack of structure for discipline	5. Instructor elicits behavior problems the parents are experiencing; group discusses methods of dealing with them.
a. Child needs consistency and limits	
b. Siblings may resent special treatment of asthmatic child	

#### RESOURCES

Creer, Thomas L. Asthma Therapy: A Behavioral Health Care System for Respiratory Disorders. New York: Springer Publishing Co., 1979.

#### IV. Coping With A Child With Asthma

Concept 4: Asthma can have a variety of effects on the child and the family.

Objective 4.3: Demonstrate the use of positive reinforcement with the child.

Evaluation: Demonstrate correctly the use of positive reinforcement with the child in a role playing situation.

CONTENT	SUGGESTED LEARNING OPPORTUNITIES
<p>II. Parents can promote self-management in the child.</p> <p>A. Use positive reinforcement when child practices self-management</p> <ol style="list-style-type: none"> <li>1. Home monitoring techniques</li> <li>2. Appropriate use of medication</li> </ol> <p>B. Use negative reinforcement for unwanted behavior</p> <ol style="list-style-type: none"> <li>1. Seek professional help if needed</li> <li>2. Family counseling can be helpful</li> </ol>	<ol style="list-style-type: none"> <li>1. Instructor leads role playing session on promoting self-management in the child with the use of positive reinforcement.</li> <li>2. Instructor summarizes effective techniques.</li> </ol>

#### RESOURCES

Creer, Thomas L. Asthma Therapy: A Behavioral Health Care System for Respiratory Disorders. New York: Springer Publishing Co., 1979.

Parcel G., Nader, P., Tiernan, K. "A Health Education Program for Children with Asthma." Developmental and Behavioral Pediatrics. 1(3):128-32, Sept., 1980.

#### IV. Coping With A Child With Asthma

Concept 4: Asthma can have a variety of effects on the child and the family.

Objective 4.3: Demonstrate the use of positive reinforcement with the child.

Evaluation: Demonstrate correctly the use of positive reinforcement with the child in a role playing situation.

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CONTENT	SUGGESTED LEARNING OPPORTUNITIES
C. Teach and reinforce breathing and relaxation exercises	
D. Promote opportunities for self-management	
1. Encourage activities	
2. Encourage self-responsibility	

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#### RESOURCES

Creer, Thomas L. Asthma Therapy: A Behavioral Health Care System for Respiratory Disorders. New York: Springer Publishing Co., 1979.

Parcel G., Nader P., Tiernan, K. "A Health Education Program for Children with Asthma." Developmental and Behavioral Pediatrics. 1(3):128-32, Sept., 1980.

## Chapter 6

### CONCLUSIONS AND RECOMMENDATIONS

The major purpose of this project was to develop and validate an educational model for parents of young asthmatic children. Parental perception of educational need was assessed and incorporated into the model with the most current critical standards regarding asthma care and treatment.

The needs assessment provided a glimpse into the problems faced by asthmatic children and their families. An intensive validation process was used to refine the curriculum and to incorporate the reactions and perspectives of diversified experts in childhood asthma and health education.

#### Conclusions

The following conclusions were drawn from this project:

1. There is a valid need to educate the parents of asthmatic children. Parents participating in this project were most eager for knowledge about the effects and proper use of various medications prescribed for their children and about objective techniques that could lead to effective home management.

2. Current medical research is increasingly advocating greater home monitoring and self-management of asthma. These techniques can be initiated quite early in the child's life through parental education. This rationale was incorporated into the educational intervention model.

3. The validation process substantiated the utility of the intervention model. In general, the panel of experts reacted positively to the content, objectives, and utility of the curriculum. Some felt the curriculum might be too didactic and that an integration of more practical learning opportunities should be incorporated.

4. Implementation of the intervention remains the most definitive method for evaluating its effectiveness as measured by decrease in excessive dependence on emergency services.

#### Recommendations

1. Educational intervention programs should be made available for parents of asthmatic children. Currently, there are many resources for and professionals working in the field of childhood asthma. However, there are no such on-going programs in the San Fernando Valley. Recently there has been an increased interest in childhood asthma reflected by much research being conducted in this area. It is hoped that this increased concern

will result in the implementation of practical, accessible programs.

2. There is a need to decentralize the role of the physician in the treatment of asthmatic children and to promote self-management through home monitoring. This is substantiated by the current trends in health education and medical research which indicate these skills can lead to a reduced need for emergency services.

3. More practical learning opportunities could be incorporated into the educational model that correspond to the parents' level of sophistication and educational background. In addition, a special intervention might be valuable for the children in promoting understanding of their disease and its management.

4. Ongoing evaluation and revision of the model, in keeping with new medications and research in the field of childhood asthma, should be considered a critical factor in the implementation of the intervention.

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APPENDIX A  
MEDICAL CHART REVIEW

## MEDICAL CHART REVIEW

(N=33)

AGE OF CHILD	FREQUENCY	PERCENT	CUMULATIVE PERCENT
1	0	0	0
2	3	9	9
3	8	24	33
4	6	18	52
5	3	9	61
6	2	6	67
7	3	9	76
8	3	9	85
9	1	3	89
10	<u>4</u>	12	100
Total	33		

SEX:	<u>NUMBER</u>	<u>PERCENT</u>
Girls:	7	21
Boys:	26	79
Total	<u>33</u>	<u>100</u>

HOSPITAL ADMISSIONS:	Range:	1-16 Admissions
	Mean:	3.6 Admissions

LENGTH OF STAY:	Range:	1-4 Days
	Mean:	1.7 Days

EMERGENCY VISITS:	Range:	0-44 Visits
	Mean:	9 Visits per child

APPENDIX B  
NEEDS ASSESSMENT QUESTIONNAIRE

You are invited to participate in a study to determine educational needs of parents of asthmatic children. We hope to learn what types of information would be useful to such parents and would appreciate your time and effort in sharing some ideas and feelings with us through a questionnaire.

If you choose to participate, you will be asked to complete a questionnaire which will take approximately ten minutes. Any information that is obtained in connection with this study will remain completely confidential.

This study is being conducted by a graduate student in Health Education at California State University, Northridge as part of a graduate project.

## 1.

Please rate the following topics as to how useful such information would be to you as the parent of an asthmatic child. Circle the number of the best answer for you. Your choices are:

- 1 = NOT USEFUL  
 2 = SLIGHTLY USEFUL  
 3 = MODERATELY USEFUL  
 4 = VERY USEFUL  
 5 = EXTREMELY USEFUL

- |     |  |   |   |   |   |   |
|-----|--|---|---|---|---|---|
| 1.  | What asthma is.....  | 1 | 2 | 3 | 4 | 5 |
| 2.  | Who gets asthma.....   | 1 | 2 | 3 | 4 | 5 |
| 3.  | How asthma is diagnosed.....   | 1 | 2 | 3 | 4 | 5 |
| 4.  | How the lungs work.....  | 1 | 2 | 3 | 4 | 5 |
| 5.  | What the effects of asthma are<br>on my child.....                                       | 1 | 2 | 3 | 4 | 5 |
| 6.  | How to recognize early signs and<br>symptoms of an asthma attack.....                    | 1 | 2 | 3 | 4 | 5 |
| 7.  | What I should do when my child<br>starts wheezing.....                                   | 1 | 2 | 3 | 4 | 5 |
| 8.  | Who I should call for advice<br>about my child's asthma.....                             | 1 | 2 | 3 | 4 | 5 |
| 9.  | When, during an asthma attack my<br>child should be brought in to<br>see the doctor..... | 1 | 2 | 3 | 4 | 5 |
| 10. | The names of the drugs for asthma...   | 1 | 2 | 3 | 4 | 5 |
| 11. | The reason why certain drugs were<br>prescribed for my child.....                        | 1 | 2 | 3 | 4 | 5 |
| 12. | How the drugs work.....  | 1 | 2 | 3 | 4 | 5 |
| 13. | How often the drugs should be<br>given.....  | 1 | 2 | 3 | 4 | 5 |
| 14. | How safe the drugs are.....  | 1 | 2 | 3 | 4 | 5 |
| 15. | The side effects of the drugs.....   | 1 | 2 | 3 | 4 | 5 |
| 16. | What should be done if the<br>side effects occur.....                                    | 1 | 2 | 3 | 4 | 5 |
| 17. | When to start the medication.....  | 1 | 2 | 3 | 4 | 5 |

- 1 = NOT USEFUL  
 2 = SLIGHTLY USEFUL  
 3 = MODERATELY USEFUL  
 4 = VERY USEFUL  
 5 = EXTREMELY USEFUL

18. When to stop the medication..... 1 2 3 4 5  
 19. How to help my child relax during  
 an asthma attack..... 1 2 3 4 5  
 20. How to help myself relax during  
 my child's asthma attack..... 1 2 3 4 5

The following questions pertain to your child's asthma.

21. How would you rate your child's asthma?  
 a. Mild  
 b. Moderate  
 c. Severe
22. How often does your child take medicine for asthma?  
 a. Every day  
 b. Occasionally (Please explain approximately  
 how often)
- 
23. What kind of problems do you have when your child is  
 taking asthma medications? (Circle all that apply)  
 a. He/she doesn't like to take medicine.  
 b. He/she doesn't like the taste of the medicine.  
 c. Vomiting occurs after the medicine is taken.  
 d. It's hard to awaken him/her at night for  
 medicine.  
 e. He/she becomes more hyperactive.
24. Please explain any other problems you are having  
 regarding the medications.

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25. Have you noticed any specific triggers to your child's asthma such as: (Circle all that apply)
- a. Weather
  - b. Infections such as colds, coughs
  - c. Exposure to animals such as dogs, cats
  - d. Foods
  - e. Dust
  - f. Pollens, weeds, mold, grasses
  - g. Physical activity such as running and playing hard
  - h. Emotional stress
  - i. Other \_\_\_\_\_
26. How do you know when your child is starting to wheeze or experience an asthma attack? (Circle all that apply)
- a. Frequent coughing
  - b. Wheezing
  - c. He/she tells you
  - d. He/she becomes irritable
  - e. Other (Please specify) \_\_\_\_\_
  - f. Don't know \_\_\_\_\_
27. What do you usually do when your child starts wheezing or experiencing an asthma attack?
- a. Start the medicine immediately
  - b. Wait to see if he/she will clear up without the medicine
  - c. Call the doctor
  - d. Bring the child in to see the doctor
  - e. Other \_\_\_\_\_
28. How many episodes of wheezing/asthma attacks has your child had within the last two months? \_\_\_\_\_
29. How many times have you had to bring your child to the doctor for problems related to asthma within the past six months? \_\_\_\_\_
30. How many times has your child been hospitalized for asthma? \_\_\_\_\_

The following questions pertain to your attitudes and feelings. Please circle the best answer for you. Your choices are:

Y = YES

N = NO

NS = NOT SURE

31. Do you feel that you have enough knowledge of asthma to play an active role in management of your child's asthma?  
Y N NS
32. Do you ever blame yourself when your child has a severe asthma attack?  
Y N NS
33. Are you satisfied with the medical treatment for asthma your child has received?  
Y N NS
34. Do you feel asthma is a serious disease?  
Y N NS
35. Do you think the asthma medications are helpful for your child's asthma?  
Y N NS
36. Do you always give the medicine when it should be given?  
Y N NS
37. Does your child become more difficult to take care of during an episode of asthma?  
Y N NS
38. Has your child's asthma had any negative effects on your family?  
Y N NS
39. Some people believe asthma is a psychosomatic disease (caused by emotions), is this true of you?  
Y N NS
40. Do you think it is possible to keep an asthma attack from occurring?  
Y N NS

The following questions pertain to background information.

41. Who usually takes care of your child during an episode of asthma?  
 a. Mother  
 b. Father  
 c. Other (Please specify) \_\_\_\_\_
42. Who is filling out this form?  
 a. Mother  
 b. Father  
 c. Other (Please specify) \_\_\_\_\_
43. At approximately what age did your child first start having episodes of wheezing or asthma?  
 \_\_\_\_\_
44. How old is your child now? \_\_\_\_\_
45. Does your child have any other medical problems? \_\_\_\_\_  
 If yes, what are they? \_\_\_\_\_
46. How many other children are in the family? \_\_\_\_\_
47. Do any of the other children have asthma? \_\_\_\_\_  
 If yes, please list age \_\_\_\_\_ sex \_\_\_\_\_
48. Do you find it easiest to learn new ideas or concepts when: (please check as many as apply)  
 a. ( ) You watch films or demonstrations.  
 b. ( ) You read pamphlets or books.  
 c. ( ) You listen to a speaker talk.  
 d. ( ) You participate in a group discussion.
49. What is your age? \_\_\_\_\_
50. Circle the last grade of school you completed:  
1 2 3 4 5 6    7 8 9 10 11 12    13 14 15 16 17+

Please add any additional comments or feelings you might have, or any suggestions as to what you would like to see in a program about asthma. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

APPENDIX C  
CONSENT FORM

CONSENT TO ACT AS RESEARCH SUBJECT

You are invited to participate in a study to determine educational needs of parents of asthmatic children. We hope to learn what types of information would be useful to such parents and would appreciate your time and effort in sharing some ideas and feelings with us through a questionnaire.

If you choose to participate, you will be asked to complete a questionnaire which will take approximately ten minutes. Any information that is obtained in connection with this study will remain completely confidential.

This study is being conducted by a graduate student in Health Education at California State University, Northridge as part of a graduate project.

I understand that I have the right to refuse to participate in this study without influencing the medical treatment my child will receive here.

I understand that if I wish to voice a complaint or concern about the research, I may direct my complaint or concern in writing to the Research Coordinator, ADM. 306, 18111 Nordhoff Street, California State University, Northridge, California, 91330.

Please feel free to ask any additional questions.

YOUR SIGNATURE INDICATES THAT YOU HAVE DECIDED TO PARTICIPATE HAVING READ THE PRECEEDING INFORMATION.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Witness

Investigator: Lynn Behles, R.N.  
(213) 367-0489

APPENDIX D  
PARENTAL RATING OF ASTHMA TOPICS  
IN RANK ORDER

PARENTAL RATING OF ASTHMA TOPICS  
IN RANK ORDER

TOPIC	RANK	SUM
The reason why certain drugs were prescribed for my child	1	126
How safe the drugs are	1	126
When to start the medication	2	125
What I should do when my child starts wheezing	3	123
What should be done if the side effects occur	4	122
What the effects of asthma are on my child	5	121
The side effects of the drugs	5	121
How to help my child relax during an asthma attack	5	121
When, during an asthma attack my child should be brought in to see the doctor	6	120
How to recognize early signs and symptoms of an asthma attack	6	120
When to stop the medication	6	120
How the drugs work	7	118
How often the drugs should be given	8	117
Who I should call for advice about my child's asthma	9	114
Who gets asthma	10	113
How asthma is diagnosed	11	112
How the lungs work	12	111
The names of the drugs for asthma	12	111
What asthma is	13	109
How to help myself relax during my child's asthma attack	13	109

Possible total = 130

APPENDIX E  
COVER LETTER

April 22, 1983

Dear

Thank you for reviewing my curriculum on asthma for parents of young asthmatic children. The topics are based on a needs assessment conducted in the San Fernando Valley. Twenty-six parents were surveyed through a questionnaire as to what would be useful to them in an educational program. The results indicated they were most concerned about the medications prescribed for their children and what they, as parents, could do to help the child during an asthmatic episode.

Please feel free to write comments on the enclosed draft. I appreciate your time and effort in helping me with this, my graduate project. You will be acknowledged in a special section in my graduate project.

Sincerely,

Lynn Behles

APPENDIX F  
VALIDATION QUESTIONNAIRE



4. Was the content adequate in coverage to provide the parents with the skills to take an active role in management of the child's asthma?

1 2 3 4 5 6

Comments:

5. Were the learning objectives adequate?

1 2 3 4 5 6

Comments:

6. Was this an effective method for educating parents?

1 2 3 4 5 6

Comments:

7. Would you use this curriculum in your facility?

1 2 3 4 5 6

Comments:

APPENDIX G  
VALIDATION EXPERTS

## VALIDATION EXPERTS

1. Guillermo Mendoza, M.D.  
Assistant Professor of Pediatrics  
UCLA School of Medicine  
Pediatric Asthma Clinic
2. Michael Pines, Ph.D.  
Clinical Instructor of Pediatrics  
UCLA School of Medicine  
Pediatric Asthma Clinic
3. Robert A. Simmons, M.P.H.  
Program Coordinator  
American Lung Association  
of Los Angeles County
4. Frank Sinsheimer, M.P.H., R.R.T.  
Professor, Health Science and  
Program Director, Respiratory Therapist Program  
Los Angeles Valley College
5. Gail Sperling, M.P.H.  
Community Education Director  
Northridge Hospital Medical Center
6. Virginia L. Wiprud, M.P.H., R.R.T.  
Professor, Health Science and  
Clinical Coordinator, Respiratory Therapist  
Program  
Los Angeles Valley College
7. Craig Zacuto, M.A.  
Counseling Intern  
UCLA School of Medicine  
Pediatric Asthma Clinic

APPENDIX H  
SURVEY POPULATION DEMOGRAPHICS

## SURVEY POPULATION DEMOGRAPHICS

Number of respondents	26
Age of parent answering questionnaire:	Range: 24-55 years Mean: 32 years
Child's age:	Range: 18 mo.-12 years Mean: 6 years
Severity of asthma (as rated by parent)	Mild: 6 (23%) Moderate: 13 (50%) Severe: 7 (27%)
Medication usage:	Daily: 12 (46%) Occasionally: 14 (54%)
Hospitalizations:	Range: 0-5 Mean: 0.9
Doctor visits in last six months (prior to questionnaire)	Range: 0-24 Mean: 4.0
Education level of parent:	Range: 6-17+ years Mean: 13 years

APPENDIX I  
SURVEY QUESTIONS REGARDING  
ATTITUDES AND FEELINGS

## SURVEY QUESTIONS REGARDING ATTITUDES AND FEELINGS

	Y = YES	N = NO	NS = NOT SURE	(N=26)		
				Y	N	NS
31.	Do you feel that you have enough knowledge of asthma to play an active role in management of your child's asthma?	12 46%	5 19%	9 35%		
32.	Do you ever blame yourself when your child has a severe attack?	7 27%	18 70%	1 3%		
33.	Are you satisfied with the medical treatment for asthma your child has received?	23 88%	0	3 12%		
34.	Do you feel asthma is a serious disease?	17 65%	5 19%	4 15%		
35.	Do you think the asthma medications are helpful for your child's asthma?	20 77%	2 8%	4 15%		
36.	Do you always give the medicine when it should be given?	22 85%	2 8%	2 8%		
37.	Does your child become more difficult to take care of during an episode of asthma?	16 62%	10 38%	0		
38.	Has your child's asthma had any negative effects on your family?	7 27%	16 61%	3 12%		
39.	Some people believe asthma is a psychosomatic disease (caused by emotions), is this true of you?	5 19%	16 61%	5 19%		
40.	Do you think it is possible to keep an asthma attack from occurring?	6 23%	15 58%	5 19%		