PARENTS' KNOWLEDGE, ATTITUDE AND PRACTICE IN CARE OF THEIR ASTHMATIC CHILDREN AT HOSPITAL UNIVERSITI SAINS MALAYSIA (HOSPITAL USM)

By

SITI NORAMARLINAH BT HAMZAH

Dissertation submitted in partial fulfillment of the requirements of the degree of Bachelor of Health Science (Nursing)

June 2014

CERTIFICATE

This is to certify that dissertation entitled "Parents' Knowledge, Attitude and Practice in Care of Their Asthmatic Children at Hospital Universiti Sains Malaysia (Hospital USM)" is the bonafide record of research work done by Miss Siti Noramarlinah binti Hamzah, 108664 during the period of December 2013 to June 2014 under my supervision. This dissertation submitted in partial fulfillment of the requirements of the degree of Bachelor of Health Science (Nursing). Research work and collection of data belong to Universiti Sains Malaysia.

ACKNOWLEDGEMENT

In the name of Allah the most Gracious and Merciful

I would like to express my gratitude to Allah for giving me strength and guidance for me in completing the research and dissertation successfully. A special thank you goes to my supervisor, madam Jayah K. Pubalan for her support and supervision given throughout the research. I am also indebted to all contributors and those people who gave their time to review my research study and not forgetting, Prof Mohd Isa for his guidance, advises and suggestion in completing the research.

I would like to show my deepest appreciation to 57 parents who had answered the questionnaires, for their participation and interest in the survey. This study could not possible without their participation. I am ever grateful to them. Special thanks are given to the all researchers who allowed me to use their instrument for my survey. I would like to express my sincere thanks and regards to all my family members especially my parents, Hamzah B Mohd Idris and Robitah Bt Hassan for all the endless moral support and patience given from the very beginning of this study until the end. Last but not least, to my entire course mates who gave full cooperation during this research, thank you.

Table of Contents **Pages**

LIST OF TABLE

LIST OF FIGURE

LIST OF ABBREVIATIONS

EIA	Exercise Induce Asthma
HBM	Health Belief Model
KAP	Knowledge, attitude and practice
SCT	Social Cognitive Theory
SPSS	Statistical Package for Social Science
USM	Universiti Sains Malaysia

PARENTS' KNOWLEDGE, ATTITUDE AND PRACTICE IN CARE OF THEIR ASTHMATIC CHILDREN AT HOSPITAL UNIVERSITI SAINS MALAYSIA (HOSPITAL USM)

ABSTRACT

Asthma is a common chronic disease among children due to the immaturity of respiratory organs system. The management of asthmatic children must be taken seriously because asthma can cause morbidity and mortality among them. The objective of this study was to determine the level of parents' knowledge, attitude and practice in care of their asthmatic children. This study was conducted by using quantitative, descriptive and cross-sectional design. Respondents were recruited by purposive sampling among parents who have asthmatic children aged 6 until 12 years old at pediatric clinic Hospital USM (n=57). The self administered questionnaire was used to collect the data. The questionnaires consists 6 parts, part A and part F was with (yes/no) answer. Another part B, part C, Part D and part E was 3 choices (correct/incorrect/not sure) answer. For demographic data, descriptive statistics were used which comprises frequency and percentage. The mean age of respondents was 36.81 years. The majority of respondents (54.4%) score at moderate level of knowledge, had positive attitude (59.6%) and good level of practice (57.9%) in care of their asthmatic children. Fisher's Exact Test revealed significant association between knowledge and attitude ($p< 0.01$), knowledge with practice ($p=0.01$), previous exposure and level of knowledge ($p=0.01$) and educational level with level of knowledge ($p=0.043$). However, there was no significant association between age and level of knowledge ($p=0.696$). In conclusion, there was a significant association between knowledge with both attitude and practice. Therefore, education regarding asthma must be enhanced to encourage successful practice in care of asthmatic children.

Keywords: *Parents, Knowledge, Attitute and Practice*

PENGETAHUAN, SIKAP DAN AMALAN IBU BAPA DALAM PENJAGAAN KANAK-KANAK ASMA DI HOSPITAL UNIVERSITI SAINS MALAYSIA (HOSPITAL USM)

ABSTRAK

Asma merupakan penyakit kronik dalam kalangan kanak-kanak disebabkan oleh ketidakmatangan organ sistem pernafasan. Walaupun asma menjadi kebiasaan dalam kalangan kanak-kanak, pengurusan kanak-kanak asma perlu diambil serius kerana asma boleh menyebabkan kecacatan dan kematian. Kajian ini bertujuan untuk mengkaji tahap pengetahuan, sikap dan amalan ibu bapa dalam penjagaan anak-anak mereka yang menghidapi asma. Kajian ini dijalankan dengan menggunakan reka bentuk kuantitatif, deskriptif dan keratan rentas. Responden telah dipilih menggunakan kaedah persampelan di kalangan ibu bapa yang mempunyai anak-anak asma berusia 6 hingga 12 tahun di klinik pediatrik Hospital USM (n = 57). Soal selidik yang telah digubah digunakan untuk mengumpul data. Soal selidik terdiri daripada 6 bahagian, bahagian A dan bahagian F mampunyai 2 pilihan jawapan (ya/tidak). Manakala bahagian B, bahagian C, Bahagian D dan Bahagian E mempunyai 3 pilihan jawapan (betul / tidak betul / tidak pasti). Bagi data demografi, statistik deskriptif telah digunakan yang terdiri daripada kekerapan dan peratusan. Purata umur sampel adalah 36.81 tahun. Majoriti responden (54.4%) mendapat markah yang sederhana dalam pengetahuan, mempunyai sikap positif (59.6%) dan tahap amalan yang baik (57.9%) dalam menjaga kanak-kanak asma mereka. Ujian Exact Fisher menunjukkan terdapat kaitan yang signifikan antara pengetahuan dan sikap ($p<0.01$), pengetahuan dengan amalan ($p=0.01$), pendedahan kepada asma dengan tahap pengetahuan ($p=0.01$) dan tahap pendidikan dengan tahap pengetahuan ($p = 0.043$). Walau bagaimanapun, tiada kaitan yang signifikan di antara umur dan tahap pengetahuan ($p=0.696$). Kesimpulannya, terdapat kaitan yang ketara antara pengetahuan dengan kedua-dua sikap dan amalan. Oleh itu, pendidikan mengenai asma perlu dipertingkatkan untuk menggalakkan amalan yang berjaya dalam penjagaan kanak-kanak asma.

Kata Kunci: *Ibu bapa, pengetahuan, sikap, amalan*

CHAPTER 1
INTRODUCTION

1.1 Background of Study

Asthma is one of the leading chronic childhood diseases in the US and a major cause of childhood disability even though the availability of effective medications to manage asthma symptoms (Akinbami, 2006). Asthma is a disorder defined by its clinical, physiological, and pathological characteristics. Mostly, features of the clinical history are episodic shortness of breath, particularly at night, and often accompanied by cough. The main physiological feature of asthma is described as episodic airway obstruction characterized by expiratory airflow limitation and the dominant pathological feature is airway inflammation, sometimes associated with airway structural changes (Ibrahim, 2006).

Morosco & Kiley, (2007) explained that airway structural changes include bronchoconstriction or abnormal narrowing, airway edema, airway hyper-responsiveness, and airway remodeling will lead to recurrent airflow limitation. While Given, (2009) stated that during asthma attack the airways become swelling, the muscles around the airways tighten up and the cells in the airways produce more secretions as a result of inflammation. Airway impairment can lead to hypoxia and ultimately death if airway patency is not established and maintained.

The exact cause of asthma is still not known, but major factors that influence the risk of asthma can be divided into those that cause the development of asthma which is host factors primarily genetic predisposition to the disease and those that trigger asthma symptoms which is environmental factors (Busse & Lemanske, 2001, as cited in Ibrahim, 2006). Genetic susceptibility alone cannot cause asthma but, it also depends on the environmental factor that acts with the genetic predisposition. Holgate and Douglass's (2010) in their study identified the environmental factor include indoor and outdoor allergens, air pollution and tobacco smoke.

Asthma was the most common among children due to the immaturity of their respiratory organ system (Environmental Protection Agency, 2006). Childhood asthma is generally milder and more intermittent character with exercise-induced symptoms and viral-induced exacerbations (Gustafsson, Watson, Davis, & Rabe, 2006). However, appropriate asthma care can prevent children from acute exacerbations, stay free from symptoms and keep physically active (Prapphal, Laosunthara, Deerojanawong & Sritippayawan, 2007). Unfortunately, Gustafsson et al., (2006), stated that parents tended to underestimate the severity of their child's asthma and overestimate the degree of asthma control.

Wong, Wong, Chung, & Lau, (2001), explained misconception together with knowledge deficiencies are reasons for non-compliance to the treatment. Parents tend to discontinue with a treatment that showed no obvious immediate effect because do not understand about the rationale of the management. While Shivbalan, Balasubramanian, & Anandnathan, (2005) found almost all parents opined that aerosol therapy was addictive and will impaired their child's ability to outgrow the disease if use the medication continuously. Al-Binali, Mahfouz, Al-Fifi, Naser, & Al-Gelban, (2010) in their survey showed a significant relationship between mothers' knowledge of asthma and their management behaviour.

Furthermore, Peterson-Sweeney, et al. (2007), have proven that parents who received asthma education from their child's health care provider showed changes in their attitude toward use of anti-inflammatory medications and a stronger partnership with the health care. Thus, Gustafsson et al. (2006) suggested that improvement parental education about asthma and a better relationship between doctor and parent may improve asthma management in children and also lead to improve asthma control.

1.2 Problem Statement

According to the Global initiative for asthma (2009) it was estimated about 300 million peoples are affected by asthma in the worldwide. Riekert, et al., (2003) showed that asthma is a common chronic disease and major public health problem especially among paediatric populations. In Malaysia, Ministry of Health Malaysia, (2006) (as cited in Devi, Hairul Izwan, Munjeet & Rosidah, 2011) reported the prevalence rate of asthma among adults was noted to be 4.5% and is increasing especially among children. Moreover, Quah's (1997) showed that the prevalence of asthma in primary and secondary school children in Kota Bharu, Kelantan was 9.4% (as cited in Mohd Baidi & Nik Mah, 2005).

A survey done by Geoman, et al., (2005) explained that inadequate control of the asthma symptom will cause school absenteeism of asthmatic child as well as parental absence from work and poor quality of life among family member. Cao, Chen, & Zhao, (2003) in their study showed about almost half of children with asthma were experience school absenteeism more than ten days per year. Asthmatic children can reduce the number of school absenteeism by control the asthma symptom. Rees (2010) stated that asthma is influenced by environmental factor as well as genetic predisposition. Environmental Protection Agency, (2006) explains that children most susceptible and vulnerable population to the air pollutant because of their immature of the respiratory system that can lead to an asthma attack.

Furthermore, Junaidah, Sann, & Zailina (2012) in their study found that high prevalence of asthma is found in urban area compare to rural area. They believe that high levels of pollutant in the urban and industrial area cause the increase of risk for asthmatic children getting frequent asthma attacks. While, Global Strategy for Asthma Management and prevention NIH, (1995) cited in Zaraket, Mohamad, Aref, Ahmad Shatila & Hani Lababidi, (2011) found that the incidence of asthma are higher among children from low socioeconomic class. Moreover, Georgy, Fahim, El Gaafary, & Walters, (2006) also found that asthma relatively common, and probably under diagnosed and undertreated, particularly among children from poorer families. However, asthma is commonly among the children from higher socioeconomic group in Ghana. Therefore, the association

between asthma and socioeconomic is different between countries (Goka, Hesse & Commey, 2004).

Uncontrolled asthma is more associated with low maternal education and parental concern about adverse effects of medication (Koster, 2011 as cited in Zaraket, Mohamad, Aref, Ahmad Shatila, & Hani Lababidi (2011). While Ortega, & Calderon (2000), reported that language and cultural barriers between providers and patients is important things that limit the exchange of information, thus leading to parents' lack of understanding of the disease, poor compliance, and failure to seek and follow up with medical care. Furthermore, weak patient–provider communication and understanding, will lead to poor medication adherence. While, Wong et al., (2001) found that the knowledge of parents regarding the use of drugs to prevent or decrease frequency of attack is often inadequate. Mohd Baidi & Nik Mah (2005) explained that parental knowledge on the drug treatment of asthma is extremely important because parent need to decide as well as administer the appropriate drug during the attack.

Furthermore, Prapphal's et al., (2007) in their study believed that acute exacerbation can be prevented as well as asthmatic children can stay free from symptom and physically active if the appropriate asthma cares including self-management is given effectively. Unfortunately, Butz, et al., (2004), found that very few children using a peak flow meter to recognize early symptoms of asthma. Lack of early detection of asthma symptoms, such as cough or rapid breathing, may lead to more emergency department visits and hospitalizations due to delay initiating treatment.

The morbidity and mortality of asthma is still increasing (Weiss and Wagener, 1990 as cited in Goka, Hesse & Commey, 2004). Childhood asthma management requires multiple complex tasks. Parents need to understand the diverse triggers and basic mechanisms of an asthma attack, and to understand the necessity of maintenance medication (Zhao, et al., 2013). Furthermore, Gustafsson, et al., (2006) explained that parents should have better understanding of the underlying inflammatory mechanisms of asthma and the safety of anti-inflammatory therapy, the importance of adhering to regular inhaled corticosteroid therapy to reduce reliance on quick-relief medication and prevent exacerbations, the importance of regular check-ups of the child's asthma which include

assessment of lung function and the right to have a written action plan to use when asthma goes out of control or to help maintain optimal control.

Proper management of bronchial asthma of children requires attention to the behavior of mother and also to the underlying beliefs which drive that behavior (Al-Binali et al., 2010). Apart from that, Prapphal et al., (2007) have proven that the knowledge level of caregiver was improved after preliminary education given. However, Grant and Van Sickle', (2001) study (as cited in Shivbalan, et al., 2005) showed it was very little is known about the public perception to the diagnosis and the impact of asthma on individuals, their families and communities. In Lebanon and other Middle East countries, the term chest allergy or recurrent dyspnea are often used instead of asthma to avoid social stigma (Zaraket, et al., 2011). Shivbalan et al., (2005), in their study showed that, some parent denied that their children have asthma and thought that asthma is only affecting adults. Furthermore, the lack of awareness of correct diagnosis is the cause of recurrent episodes resulting in hospitalization and emergency room visit among asthmatic children. A study done by Smeeton, Rona, Gregory, (2007) found that the parents' health beliefs are powerful barrier in manage of asthma child. To improve childhood asthma management, an assessment of parental knowledge, attitudes and practices (KAP) is a significant requirement (Zhao, et al., 2013).

Nor Rosidah and Quah (2006) in their study at Hospital USM reported more than half children required at least one revisit to emergency department for the last one year. It showed that, children's asthma symptoms were still not adequately controlled. The latest monthly statistics in Hospital USM showed that respiratory problem is the leading cause of hospitalization which in April 2014, 76 cases of respiratory problem in ward 6 Selatan and 84 cases of respiratory problem in May 2014, acute exacerbation bronchiole asthma is one the respiratory problem. Apart from that, there was no recent study done in Hospital USM to assess the level of parental knowledge regarding asthma, attitude and practice in care of their asthmatic children in Hospital USM. Many studies have showed that management of asthma is influenced by parental knowledge. Wong et al. (2001), in their study showed knowledge deficiency among parents lead to non-compliance to the treatment. Thus, this study was conducted to document the KAP of parents of children

with asthma and to identify how knowledge is related to attitude and practices in care of their asthmatic children in Hospital USM.

1.2.1 Theoretical and Conceptual Framework

Health belief model is used to understand parents' health behaviour and possible reasons for non-compliance with the recommended health management of their asthmatic children in this study. The health belief model (HBM) has been used extensively as a framework for studying adult health and illness behaviour. Clark et al., (1988), found that belief in self-management was positively correlated with management behaviour during an earlier attack. The expectations of an individual can be determined from the combined perceptions of barriers to, benefits of, and self-efficacy in undertaking the recommended health behaviours (Evers, Jones, Caputi, & Iverson, 2011). The children still not matured in their cognitive and psychosocial development, so the responsibility for asthma management is primarily held by parents. Thus, the Health Belief Model was used to find out the important of knowledge towards attitude and practice of parents in care of their asthmatic children.

1.3 Objectives of the Study

The general objective of this study is to identify the level of knowledge, attitude and practice (KAP) of parents with asthmatic children in Hospital Universiti Sains Malaysia (Hospital USM).

1.3.1 Specific Objectives

1. To identify the level of parents' knowledge of asthma in Hospital USM.

2. To identify the level of parents' attitude in care of their asthmatic children in Hospital USM.

3. To identify the level of parents' practice in care of their asthmatic children in Hospital USM.

4. To determine the association between parents' selected demographic data (age and educational level) with their level of knowledge.

5. To determine association between parents' previous exposure to asthma and level of parental knowledge.

6. To determine association between level of parents' knowledge and level of parents' attitude in care of their asthmatic child.

7. To determine association between level of parents' knowledge and level of parents' practice in care of their asthmatic child.

1.4 Research Questions

1. What is the level of parents' knowledge on care of asthmatic children in Hospital USM?
2. What is the level of parents' attitude in care of asthmatic children in Hospital USM?
3. What is the level of parents' practice in care of asthmatic children in Hospital USM?
4. What is the association between parents' demographic data (age and educational level) with the level of parental knowledge of asthma?
5. What is the association between parents' previous exposures to asthma with the level of parental knowledge of asthma?
6. What is the association between level of parental knowledge and level of parental attitude in cares of their asthmatic child?
7. What is the association between level of parental knowledge and level of parents'practice in cares of their asthmatic child?

1.5 Research Hypothesis

Hypothesis 1

1.5.1 Ho: There is no significant association between knowledge of asthma with attitude of parents of asthmatic children.

HA: There is a significant association between knowledge of asthma with attitude of parents of asthmatic children.

Hypothesis 2

1.5.2 Ho: There is a no significant association between knowledge on asthma and practice in care of their asthmatic child.

HA: There is a significant association between knowledge on asthma and practice in care of their asthmatic child.

Hypothesis 3

1.5.3 Ho: There is no significant association between demographic data (age and educational level) with the level of parental knowledge on asthma.

HA: There is a significant association between demographic data (age and educational level) with the level of parental knowledge on asthma.

Hypothesis 4

1.5.4 Ho: There is no significant association between previous exposures to asthma with the level of parental knowledge asthma

HA: There is a significant association between previous exposures to asthma with the level of parental knowledge of asthma

1.6 Definition of Terms

1.6.1 Knowledge

The Oxford Dictionary (2013) defines knowledge as facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject. Knowledge also defined as awareness or familiarity gained by experience of a fact or situation. In this scope of study, knowledge will be including the parents' knowledge about the etiology of asthma and knowledge regarding drug used in the treatment of asthma.

1.6.2 Attitude

Attitude is defined as a settled way of thinking or feeling about something (Oxford Dictionary, 2013). In this scope of study, focus to assess the attitude of parents in the use of asthma treatments, views about the prognosis of the child's asthma, and parent's feelings about others knowing of their child's problem

1.6.3 Practice

Oxford dictionary (2013) defined practice as the actual application or use of an idea, belief, or method, as opposed to theories relating to it; the customary, habitual, or expected procedure or way of doing of something; repeated exercise in our performance of an activity or skill so as to acquire or maintain proficiency in it. Best practices in this scope of the study refer to timely intervention and active management with appropriate care. Including whether parents' use aerosol therapy, peak flow meter, consult the paediatrician and confidence in handling asthmatic child during an attack.

1.6.4 Asthmatic children:

Asthma is defined as a respiratory condition marked by attacks of spasm in the bronchi of the lungs, causing difficulty in breathing. It is usually connected to an allergic reaction or other forms of hypersensitivity (Oxford dictionary, 2013). While children are define by Oxford dictionary (2013) as a young human being below the age of puberty or below the legal age. Table below shows the range age of each group of children.

Infants (0-1 year of age)
Toddlers (1-2 years of age)
Toddlers (2-3 years of age)
Preschoolers (3-5 years of age)
Middle Childhood (6-8 years of age)
Middle Childhood (9-11 years of age)
Young Teens (12-14 years of age)
Teenagers (15-17 years of age)

Table 1.1: Range age of each group of children. (CDC, 2011)

For this study, asthmatic children were classified as child from 6 years old to 12 years old who are diagnosed have asthma. According to asthma society of Canada, diagnosing asthma in young children is difficult because children often cough and wheeze with colds and chest infections but this is not necessarily asthma. Since there is no diagnostic test available for children younger than 6 years of age, making a diagnosis in this age group is more difficult than in older children. Over the age of about 6 years it is possible for a

child to have a spirometry test. This is a simple test that measures a child's airflow through the large and small airways.

1.7 Significance of Study

Children with asthma need a support system especially from parents to help them properly manage their asthma from day to day. Parents need to become more aware of asthma in order to help their children who have asthma, better managed their asthmatic children, and help ensure environments that minimize asthmatic children's exposure to asthma triggers.

Thus, to know level of knowledge, attitude, and practice in the care of asthmatic children is very important. Identification level of parental knowledge will help to facilitate the effectiveness of the educational program for the parents of asthmatic children. If the study is not done, the level of knowledge, attitude, and practice in the care of asthmatic children is unknown. No action will be taken to improve the level of knowledge, attitude, and practice in the care asthmatic children if the findings show that poor knowledge, attitude, and practice in care asthmatic children.

Furthermore, it is well recognized that asthma is a common disease among children, the incidence is increasing in developed and in developing countries. It is hoped that from this study, educational program can be successfully developed. Increase understanding of parents toward asthma hopefully can improve the management of asthmatic children.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

The purpose of this study was to identify parents' knowledge, attitude and practice about asthma and its management in their children. A review of the literature was conducted to assess parents' knowledge of asthma, parents' knowledge of asthma medication, parents' attitude on asthma management and parents' practices of asthma management on their children as well as association between demographic data (age and educational level) and level of parental knowledge. The theoretical framework related to the Health Belief Model (HBM) will also be discussed in this chapter.

2.2 Review of Literature

2.2.1 General Knowledge on Asthma

A study conducted by Shivbalan, et al., (2005) showed that the majority of parents with asthmatic children were not aware of what asthma is, only a few of them knew the correct definition of asthma with another opined that it is a disease of adult which cause growth retardation and decrease work capability. However, Zhao, et al., (2013) reported that the majority of the parents in China know the nature of asthma but the level of KAP still lower among parents, with a lack of awareness on asthma clinical manifestations or the trigger to the acute attack. Other than that, a survey in Aseer also highlights some deficiencies knowledge among mother about asthma behaviour. This occurs because physicians do not prioritize patient education, development of management skill and assumes an appropriate degree of responsibility for pediatric asthma care (Al-Binali, et al., 2010). Meanwhile, the same situation occurred in a survey conducted by Prapphal, et al., (2007) where almost half of the caregivers still lacked sufficient knowledge of asthma.

Moreover, studied done by Zaraket, et al., (2011) in Lebanon showed majority of parents did not recognize asthma by its name but they called it chest allergy or recurrent dyspnea. Apart from that, some of the parents still misconception about asthma and thought that asthma is a contagious disease. The same situation occurs in the survey that conducted by Mohd Baidi and Nik Mah (2005) which demonstrated that majority of parents knew the etiology of asthma but, only a few of the parents knew actually, asthma will not spread to another person. In contrast, Goka et al., (2004) state in Ghana the level of parents' awareness toward asthma extremely high.

A survey done on adult asthmatic patient also shown that the knowledge of an asthmatic patient about their disease is very low, only nine from one hundred and twenty patients were knowledgeable about their disease (Sharifi, Pourpak, Heidarmazhad, Bokaie, & Moin, 2011). Compare to the study done to evaluate asthma knowledge among primary school teacher shows that teachers were highly aware of asthma but moderately high confidence in managing children with asthma, it is very important for the teacher to provide appropriate care as asthma prevalence is higher among school aged group (Al-Motlaq, & Sellick, 2013). Salama, Mohammed, El-Okda & Said, (2010) reported about clinician awareness and attitude towards national and international guidelines and their adherence to its recommendation were resulted in poor knowledge, poor practice and poor attitude among clinician. Most of clinician does not know how to assess asthma severity and this will lead to inappropriate controller dose selection.

2.2.2 Knowledge on Asthma Medication

Majority of respondents gave the correct answer to the statement on proper use medication of asthma but only a few of them correctly answers to the statement on the drug used in the treatment of asthma were seen through the study done by Mohd Baidi and Nik Mah (2005). Study in India conducted by Shivbalan et al., (2005) demonstrated only a small number of children were on aerosol therapy at home. The reasons of this situation is because parents opined that these devices are addictive or harmful lead to non-acceptance of these therapies amongst patient. The same situation occurs in survey done by Zhao et al., (2013) which evaluate that parent is still worried about the negative effect of inhaled corticosteroid on children's growth, drug dependence, and potential

harm to children's intelligence. Apart from that, a few of the parents thought that antibiotic could reduce the symptom of asthma and two-third of the parents incorrectly believed that antibiotics were effective against viral infections was found in a survey done by Wong et al (2001).

Goka, et al., (2004) showed in their study majority of respondent belief that herbal medicine had a role in the treatment of asthma but only a few of them admit they had used it. The respondents believed a combination of lime and honeys important in management of asthma while this combination actually not shown to have any beneficial effect in asthma at all. Same with the study done in Lebanon by Zaraket et al., in (2011) showed almost all of the parents thought that herbs had a role in the disease treatment. Furthermore, the parents express a concern about safety of asthma medication. They opined that the inhaler was addictive and express worried about inhaled steroids' side effect.

Misconception occurs in a few of respondent that mentions cough as a symptom of asthma. Thus, lead to administer an only cough mixture rather than bronchodilator drug among of parents. It is important to educate parents to recognize persistent coughing in an asthmatic as an early indication of an exacerbation and thus, initiation of bronchodilator must be done rather than cough mixture (Goka, et al., 2004). A survey done among the physician by Salama, et al., (2010), demonstrates most physicians agreed that corticosteroid should be used as a controller but most of them believed this therapy effect patient's growth significantly. This belief led to the prescribed the controller for the short term therapy by the physician although, recent guidelines mandated controller therapy for long period according to degree of control.

Apart from that, Salama et al. (2010) also stated in their study, there are physicians that prescribed antibiotics as therapy for childhood asthma routinely which not agreed with the recommendations of the guidelines. While Riekert et al., (2003) reported in their study the communication between patient and physician about medication were poor. Riekert believed efforts to improve physician adherence to guidelines will not result in proper treatment unless the caregiver – physician communication about asthma therapy is also improved.

2.2.3 Parent Attitude on Asthma Management

Survey by Zhao et al., (2013) found that only few of parents would allow their children to participate in minor sport only even though most parents know that their children could participate in sport if their asthma under control and they also believed that asthma children could exercise as much as healthy children. Meanwhile Wong et al. (2001) also found in their study, a few of the parents did not allow their children to attend any physical exercise even if they did not have any symptom at all.

It was surprising when two-third of parents reported that their asthmatic children lived with someone who smokes although tobacco smoke was identified as a significant trigger and exacerbating factor for asthma (Zaraket, et al., 2011). Grigg (2004), suggest to all parents who smoke to at least smoke outside from the home because passive smoke exposure will exacerbates asthma.

Zhao et al. (2013) believed that communication with medical staff is the most important pathway that parents obtain asthma-related knowledge. Parents who received a written action plan in the pediatric emergency department are more confident in their ability to provide care for their children during an asthma exacerbation. However, Wong et al. (2001) in their study shows, almost all of parents were not given specific advice on when to seek urgent treatment. Grigg (2004) suggested that clinicians and asthma nurse have to make sure that the written action plan is well understood by the parents.

2.2.4 Parents Practices in Care of Asthmatic Children

Zhao et al. (2013) find in China, the situation is better in terms of children taking pulmonary function tests but poorer in terms of regular monitoring which very few of asthmatic children used peak flow meter to monitor their daily condition. Same as a survey done by Mohd Baidi and Nik Mah, (2005) which found that the majority of the respondents were aware of the importance of routinely use a peak flow meter but, it was not their priority to keep peak flow meter because the majority of parents were from low income group with less than RM 1000 income per month.

A survey in Aseer in 2010 shown that most practice behavior during an asthma attack are given the necessary medication, massage child's chest, encourage child cough

to clear the mucus from the lung and minimized the child's movement while least practice that are noted is breathing exercises either during an asthma attack or to prevent attacks although breathing exercise was effective to strengthen the respiratory muscle and reverse the conditions which aggravate asthma attacks if regularly practiced (Al-Binali, et al., 2010).

2.2.5 Association between Demographic Data and Level of Parental Knowledge

From the study in Aseer, the researcher identified risk factors for poor knowledge and behaviors among mothers are the mother's age and literacy. Older mother shows more knowledge than younger mothers due to more experience and cognition through social learning (Al-Binali, et al., 2010). While Prapphal et al., (2007) found that the duration of the care asthmatic children were associated with the level of knowledge. The longer duration of caring for asthmatic children resulted in adequate knowledge of asthma among caregiver.

Apart from that, the educational level and length of disease is seen to be associated with the knowledge of asthma, where a university educated patient is more knowledge about asthma rather than patient with just a primary school. In contrast, Goka et al., (2004) found that high level of knowledge did not influence by the level of education. Furthermore, a patient that has asthma for a longer period showed higher degrees of asthma knowledge comparable to patient who have asthma in the short periods (Sharifi, et al., 2011). Other than that, Mohd Baidi and Nik Mah (2005) find that parents with previous exposure to asthma have better knowledge compared to parents without previous exposure.

2.3 Conceptual Framework

Theories have an important role in health education. It can explain relationships and help answer the what, how, when and why questions. Theories can be the basis for research and aid in the formulation of hypotheses and designing research procedures. Therefore, interventions can be planned, outcomes predicted, and impacts measured by using theories (Butler, 2000).

The Health Belief Model (HBM) is a conceptual framework used to understand health behaviour and possible reasons for non-compliance with the recommended health act (Rosenstock, Stretcher & Becker, 1988). According to the Health Belief Model (HBM), attitudes and beliefs were the important things in the determinants of health behaviour change and affect an individual's health-related actions. The underlying concept in HBM is personal beliefs and perception may influence the health behaviours. Beliefs may include cognitions and attitudes about what illness is, how one should respond to symptoms, and how efficacious such responses would be. Previous research has found that asthma-related beliefs are linked to both behavioural and clinical outcomes (Walker, Chim, & Chen, 2009).

People make decisions for their health is influenced by perceptual factors such as susceptibility to illness, severity of the illness, efficacy in treating the illness, and barriers to change behaviour to prevent from the illness. The HBM also suggests that behaviour influenced by cues to action which is a factor that activate "readiness to change" or known as a trigger mechanism for make a change. In 1977, Bandura introduced the concept of self-efficacy from Social Cognitive Theory (SCT). Self-efficacy is defined as "the conviction that one can successfully execute the behaviour required to produce the outcomes".

Three distinct phases that lead to a health-related action exists within the HBM: individual perceptions, modifying factors, and likelihood of action. Perceived susceptibility is a belief about the chances of getting a condition. Risk or susceptibility is the main things that make people to adopt healthy behaviours. For example, when the parents' belief their children are at risk for getting asthma, parents will more likely to

prevent it from happening but, the opposite also occurs. Perceived severity is an individual evaluation of the seriousness of the consequences associated with the state or condition (Walker, et al., 2009).

Other than that, modifying factor is a personal factor of people that affect whether adopt the new behaviour or not. Modifying factor can be demographic variables, such as age, gender, and educational level; sociopsychologic variables, such as personality and peer pressure; and structural variables, such as knowledge about the condition or the disease (Keel, 2003).

An individual will only act if the benefits of the action are greater than the barriers to the action. A perceived benefit is defined as changes in behaviours to offset a perceived threat. Perceived barriers are individual's own evaluation of the barrier in the way of adopting new changes in behaviours. If the change is difficult, unpleasant or inconvenient and outweighs the perceived benefits, the changes in behaviour are less likely to occur. At this point, self-efficacy is also important in that the individual must have the confidence that he or she can carry out the action (Keel, 2003).

This study used the HBM to identify parents' knowledge, attitude and practice of childhood asthma management in Hospital USM, Kubang Krian, Kelantan. An understanding of identifying parents' knowledge, attitude and practice of childhood asthma management are critical for the development of educational programs for parents with the goal of improving the management of asthma in their children.

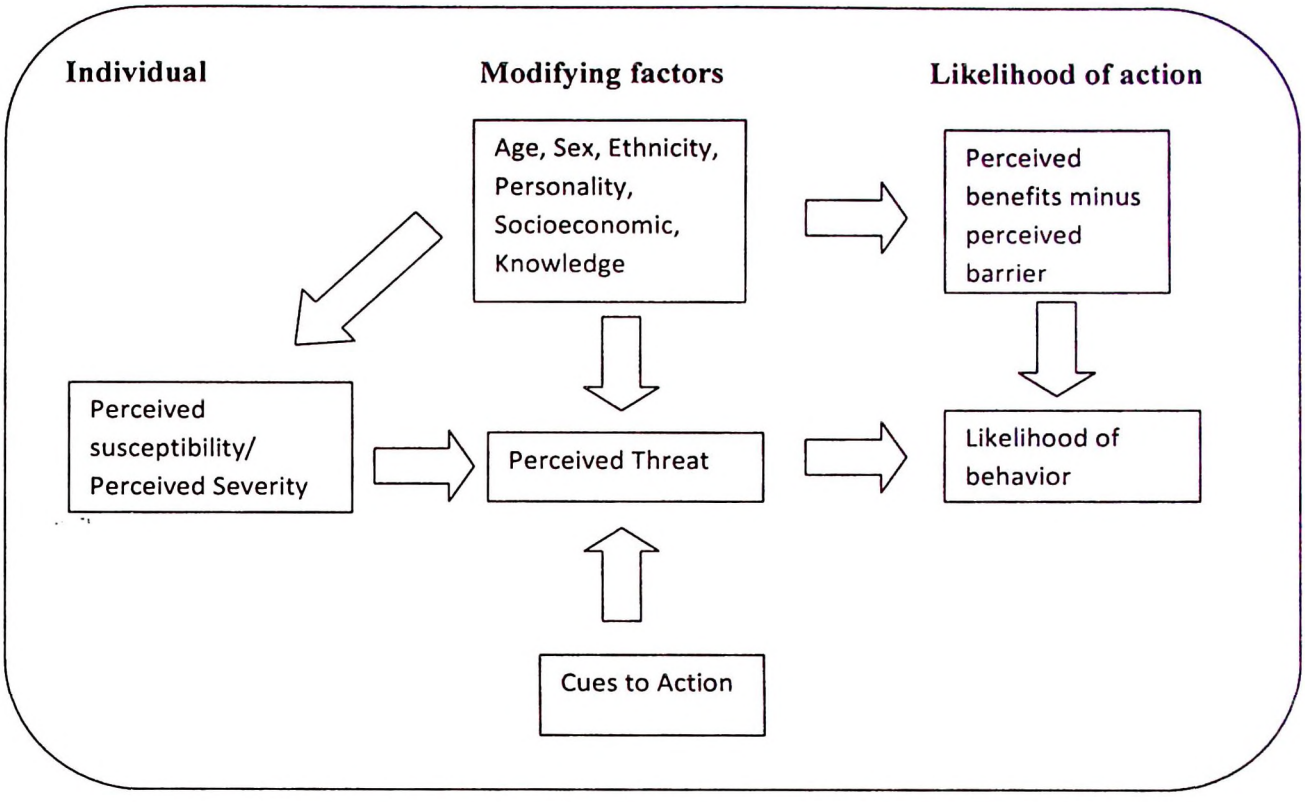

Figure 2.1: Strecher, Rosenstock, (1997). The Health Believe Model. In Glanz K., Lewis F.M., & Rimer, B.K., (Eds.). Health Behavior and Health Education Theory, Research and Practice. San Francisco: Jossey-Bass. Cited in, chapter 4: health belief model, n.d

In related to my study, the HBM was applied within the questionnaire. The parents' knowledge, attitude and practice in the care of their asthmatic children at Hospital Universiti Sains Malaysia (Hospital USM) survey Instrument consists of 51 items. The items were selected for inclusion based on the constructs of the HBM. These included perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, structural variables (previous exposure to asthma), and demographic variables (age and educational level). See Table 2.1 for a listing each construct of the items that fall within each constructs.

Table 2.1: List each construct of the items

Construct	Statement
Perceive susceptibility	1. Asthma is an inherited disease 2. Asthma attack is more common at night 3. Playing with cat/dog can lead to an asthmatic attack 4. Playing in the rain can lead to an attack 5. Certain type of food can lead to an attack 6. Wheezing after exercise suggests asthma 7. Asthma is caused by allergic reaction of the respiratory tract 8. Inhalation of cigarette smoke will aggravate an attack 9. Cough and cold can lead to an attack 10. Sports can lead to an attack 11. Asthma can spread to another person 12. Cold weather can lead to an attack 13. Dusts/smokes can lead to an attack 14. Asthma is caused by an infection of the respiratory tract 15. Asthma is caused by the constriction of the respiratory tract 16. I believe that my child has asthma
Perceive severity	1. Asthma can cause retardation of growth 2. Asthma attack can cause death to children 3. Asthma can be cured 4. Asthmatic child should avoid exercise 5. I find an attack very frightening 6. I am confident that my child will get better
Perceive benefits	1. β agonist can relieve acute symptoms 2. β agonist is used to prevent attack 3. β agonist is used to prevent exercise induced attack 4. Steroid can relieve acute symptoms 5. Steroid is used to prevent attack 6. Steroid is used to prevent exercise induced attack

	7. Intal can relieve acute symptoms 8. Intal is used to prevent attack 9. Intal is used to prevent exercise induced attack 10. Oral bronchodilator has less side effect 11. Inhaled bronchodilator has less side effect 12. Antibiotics can shorten asthmatic attack
Perceive barrier	1. It is difficult remembering to give my child their inhaler 2. I have worries about drugs 3. Medicines are addictive 4. I am worried about the effects of medicines 5. It is easy to get my child to take their inhaler 6. Carpet at home is undesirable if your kid has asthma
Self-efficacy	1. Is your child on aerosol therapy? 2. Is your child receiving any regular daily oral medication for more than a month? 3. Do you know about peak flow meter? 4. Are you using peak flow meter? 5. Do you consult the pediatrician about your child asthma attack? 6. Are you able to treat your child's asthma attack at home 7. Have you ever treat your child with herbs for asthma? 8. I have confidence in [medical] asthma control 9. Faith is more important than [medical] control 10. I allow my child to attend PE classes 11. I give the preventer every day.

When looking at managing asthma in children, the model shifts from targeting the individual with asthma to targeting the individual's care takers such as parents. The focus is on the parents' and intrapersonal ("within individuals") factors. Parents' will take action if they perceive their children as susceptible to a disease or condition, if they believe the condition will lead to serious consequences, and if a beneficial course of

action is available to them. Then parents' is more likely to undertake the recommended preventive health action.

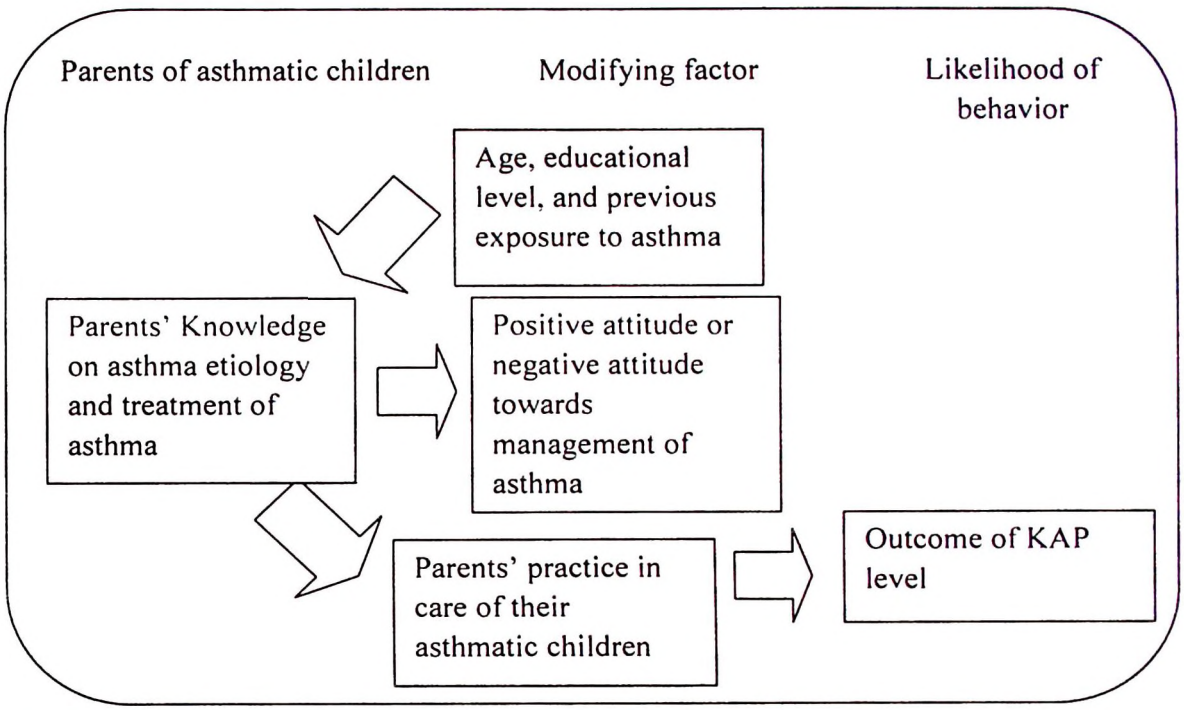

Figure 2.2: Adapted theory of parent's knowledge, attitude and practice in cares of their asthmatic children (Strecher, Rosenstock, 1997 Cited in, chapter 4: health belief model, n.d)

Health Belief Model (HBM) was used in my study to assess parental knowledge, attitude and practice in care of asthmatic children which demographic data are include age and educational level while previous exposure toward asthma are the structural variable. Perceive susceptibility/ perceive severity is indicating the knowledge of parents toward asthma. While Perceive benefits minus perceive barrier is the attitude of parents which good attitude will be showed if perceive benefits is greater than perceive barrier. Self-efficacy and likelihood of behavior is representing the parents practice in cares their asthmatic children. Thus, parental knowledge, attitude and practice in care of asthmatic children will be assessing by using this HBM.

CHAPTER 3
METHODOLOGY

3.1 Research Design

This study was conducted by using quantitative, descriptive and cross-sectional design in order to identify knowledge, attitude and practice in care of asthmatic children. Purposive sampling were used to distribute the questionnaire for parents who have asthmatic children aged 6-12 years old seen at paediatric clinic Hospital USM. The study was conducted over a period of month started February 2014 to March 2014.

3.2 Population and Setting

This study was conducted in Hospital USM. The self-administered questionnaire were distributed to parents who had asthmatic children aged 6-12 years old who attended the pediatric clinic, Hospital USM.

3.3 Sampling Plan

3.3.1 Sample Size

The samples were consists of parents with asthmatic children who attended the pediatric clinic, Hospital USM. The sample size was estimated based on RAOSOFT Sampling method (2004).The mean population of asthmatic children attended to the pediatric clinic in Hospital USM in one month is 55. By using the RAOSOFT sample size calculator, the total samples of the parents who have asthmatic child are 52. With the 10% drop out, the total sample size was (52+5) = 57. This amount of sample was including the failure to fulfill the inclusion criteria of the study and also time limitation and refusal of the parents to answer the questionnaire. The formula used was by RAOSOFT sampling method formula which as below (Raosoft. Inc, 2004).

$$x = Z(c/100)2r(100-r)$$

$$n = N\ x/((N-1)E2 + x)$$

$$E = Sqrt[(N - n)x/n(N-1)]$$

3.3.2 Sampling Method

This study was conducted by non-probability sampling technique which purposive sampling. A total of 57 parents with asthmatic children aged 6-12 years old who attended at the pediatric clinic Hospital USM were selected. For this study, asthmatic children were chosen from children from 6 years old to 12 years old who are diagnosed have asthma. According to asthma society of Canada, diagnosing asthma in young children is difficult because children often cough and wheeze with colds and chest infections but this is not necessarily asthma. Since there is no diagnostic test available for children younger than 6 years of age, making a diagnosis in this age group is more difficult than in older children. Over the age of about 6 years it is possible for a child to have a spirometry test. This is a simple test that measures a child's airflow through the large and small airways.

3.3.3 Inclusion and Exclusion Criteria

3.3.1.1 Inclusion Criteria

The respondents of this study were selected from

- Parents of asthmatic children of 6-12 years old in pediatric clinic.
- Parents that involves in the study also should able to answer in Bahasa Malaysia or English.
- Voluntary to participate and able to give consent.

3.3.1.2 Exclusion Criteria

The respondents of this study were excluding

- Parents of asthmatic children less than 6 years old or more than 12 years old.
- Parents who are the children with chronic illness, on therapy for tuberculosis, bronchiectasis, and cardiac disease
- Parents who do not accompany their children to the pediatric clinic