

KNOWLEDGE, ATTITUDE AND PRACTICES OF ASTHMA FOOD
TABOOS AND ITS ASSOCIATED FACTORS AMONG PARENTS OF
ASTHMATIC CHILDREN IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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ASTHMATIC CHILDREN IN HOSPITAL UNIVERSITI SAINS MALAYSIA

by

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Dissertation submitted in partial fulfilment of
the requirements for the degree of
Bachelor in Nursing with Honours

August 2024

CERTIFICATE

This is to certify that the dissertation entitled “Knowledge, Attitude, and Practice of Asthma Food Taboos and its Associated Factors Among Parents of Asthmatic Children in Hospital Universiti Sains Malaysia” is the bona fide record of research work done by Ms. “Nur Syafiqka Atika Binti Mohd Ridzuan” during the period from 2023 to August 2024 under my supervision. I have read this dissertation and, in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfillment for the degree of Bachelor of Nursing (Honours).

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DECLARATION

I hereby declare that this dissertation is the result of my investigation, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institutions. I grant Universiti Sains Malaysia the right to use the dissertation



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NUR SYAFIQKA ATIKA BT MOHD RIDZUAN

Date: 7 August 2024

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Table of Contents

CERTIFICATE.....	ii
DECLARATION	iii
ACKNOWLEDGEMENT	iv
LIST OF FIGURES	x
LIST OF ABBREVIATIONS.....	xi
ABSTRAK.....	xii
ABSTRACT.....	xiii
CHAPTER 1	1
INTRODUCTION	1
1.1 Background of The Study.....	1
1.2 Problem Statement.....	4
1.3 Research Questions.....	5
1.4 Research Objectives	6
1.4.1 General objective	6
1.4.2 Specific objectives	6
1.5 Research Hypothesis.....	7
1.6 Conceptual and Operational Definitions	7
1.7 Significant of The Study.....	10
CHAPTER 2	12
LITERATURE REVIEW	12
2.1 Introduction.....	12
2.2 Asthma Disease.....	12
2.3 Factors Influence Asthma Attack.....	13
2.4 Food Taboos.....	15
2.4 Knowledge of Asthma Food Taboos	15
2.5 Attitude of Asthma Food Taboos.....	16
2.6 Practice of Asthma Food Taboos	17

2.7 Factor Affecting Practice Regarding Asthma Food Taboos	17
2.7.1 Age.....	17
2.7.2 Religion.....	18
2.7.3 Ethnicity.....	18
2.7.4 Educational Level	19
2.8 Theoretical and Conceptual Framework of The Study	20
CHAPTER 3	23
METHODOLOGY AND METHODS	23
3.1 Study Design.....	23
3.2 Study Location.....	23
3.3 Study Duration.....	23
3.4 Study Population.....	23
3.5 Selection Criteria	24
3.6 Sampling Method.....	24
3.7 Sample Size Calculation	25
3.7 Study Instruments	28
3.7.1 Instrument	28
Part I: Socio-demographic data.....	28
Part II: Knowledge of asthma food taboos	29
Part III: Attitude of asthma food taboos	29
Part IV: Practice of asthma food taboos	29
3.7.2 Translation of Instruments	29
3.7.3 Validity and Reliability.....	30
3.8 Variables	30
3.8.1 Variable Measurement.....	30
3.8.2 Variable Scoring	31
3.9 Data Collection Plan	31
3.9 Study Flowchart.....	33
3.10 Data Analysis.....	34
3.11 Ethical Consideration.....	35

CHAPTER 4: RESULTS	37
4.1 Introduction.....	37
4.2 Results of the Study	37
4.2.1 Sociodemographic Characteristics Among Parents of Asthmatic Children in HUSM...37	
4.2.2 The Level Knowledge of Asthma Food Taboos Among Parents of Asthmatic Children in HUSM.....	39
4.2.3 The Level of Attitude Towards Asthma Food Taboos Among Parents of Asthmatic Children in HUSM.....	41
4.2.4 The Level of Practice Towards Asthma Food Taboos Among Parents of Asthmatic Children in HUSM.....	43
4.2.5 The Correlation between Knowledge, Attitude and Practice Towards Asthma Food Taboos Among Parents of Asthmatic Children in HUSM.....	45
4.2.6 The Association between Sociodemographic Factors and Practice Towards Asthma Food Taboos Among Parents of Asthmatic Children in HUSM.	45
CHAPTER 5: DISCUSSION.....	47
5.0 Introduction	47
5.1 Sociodemographic Characteristics of Respondents.....	47
5.2 The Level of Knowledge Towards Asthma Food Taboos Among Parents with Asthmatic Children in HUSM.	48
5.3 The Level of Attitude Towards Asthma Food Taboos Among Parents with Asthmatic Children in HUSM.	49
5.4 The Level of Practice Towards Asthma Food Taboos Among Parents with Asthmatic Children in HUSM	49
5.5 The Correlation Between Knowledge, Attitude, and Practice Towards Asthma Food Taboos Among Parents with Asthmatic Children in HUSM.....	51
5.6 The Association Between Selected Sociodemographic Factors and The Level of Practice Towards Asthma Food Taboos Among Parents with Asthmatic Children in HUSM	52
5.7 Strengths and Limitations of the Study.....	55
CHAPTER 6: CONCLUSION	56
6.1 Summary of the Study Findings	56
6.2 Implication and Recommendations.....	57
6.2.1 Nursing Practice.....	57

6.2.2 Health Education.....	57
6.2.3 Recommendation	58
6.3 Conclusion	59
References.....	60
APPENDIXES	67
Appendix A: Instrument	67
6.1 Appendix C: Research Information and Consent Form	77
Appendix D: Permission from Director of Hospital Universiti Sains Malaysia.....	83
Appendix E: Approval From Human Ethics Committee.....	85

LIST OF TABLES

Table 1 Operational Definition and Conceptual Definition.....	7
Table 4. 1 Sociodemographic Characteristics Among Parents of Asthmatic Children in HUSM (n=344).....	38
Table 4. 2 Frequency and Percentage Distribution of Knowledge of Asthma Food Taboos (N=344).....	40
Table 4.3 Knowledge of Asthma Food Taboos Among Parents in HUSM. (N=344).....	40
Table 4.4 Frequency and percentage distribution of attitude towards asthma food taboos (N=344).....	42
Table 4. 5 The attitude of asthma food taboos among parents with asthmatic children in HUSM (N=344).....	42
Table 4.6 Level of practice on asthma food taboos among parents with asthmatic children in HUSM. (N=344).	43
Table 4.7 Frequency and Percentage distribution of common types of asthma food taboos practiced by parents with asthmatic children (N=211).....	44
Table 4.8 Frequency and percentage reasons for practicing asthma food taboos. (N=211)	44
Table 4.9 Correlation of knowledge, attitude and practice of asthma food taboos (N=344)...	45
Table 4.10 The Association between Selected Sociodemographic Factor and the Level of Practice Towards Asthma Food Taboos Among Parents with Asthmatic Children in HUSM. (N= 344).....	46

LIST OF FIGURES

Figure 2. 1 The Health Belief Model was adopted by Bruce et al. (2018).	20
Figure 2. 2 Conceptual framework of the study for knowledge, attitude and practice of asthma food taboos among parents of asthmatic children adopted from Bruce et al. (2018).	22
Figure 3. 1 Calculation for Objective 2	27
Figure 3. 2 Calculation for Objective 3	27
Figure 3. 3 Calculation for Objective 4	28
Figure 3. 4 Flow chart of the data collection process.	33

LIST OF ABBREVIATIONS

Gc	Glucocorticoid
HBM	Health Belief Model
HREC	Human Research Ethics Committee
HUSM	Hospital Universiti Sains Malaysia
Ig E	Immunoglobulin E
KPP	Klinik Pakar Perubatan
KRK	Klinik Rawatan Keluarga
NHMS	National Health & Morbidity Survey
Th1	T helper 1
Th2	T helper 2
WHO	World Health Organizational

**Pengetahuan, Tingkah Laku, dan Amalan Terhadap Pantang Larang Pemakanan
Asma dan Faktor yang Berkaitan Dalam Kalangan Ibubapa Pesakit Kanak-kanak
Asma di Hospital Universiti Sains Malaysia**

ABSTRAK

Pantang larang pemakanan asma adalah satu set larangan makanan yang boleh menyebabkan serangan asma. Ini akan memberi kesan kepada seberapa baik asma dirawat secara perubatan. Objektif kajian ini bertujuan untuk mengetahui pengetahuan, sikap dan amalan pantang larang pemakanan asma dan faktor-faktor yang berkaitan dalam kalangan ibubapa pesakit kanak-kanak asma di Hospital USM. Reka bentuk kajian keratan rentas telah dijalankan dalam kajian ini. Data dikumpulkan menggunakan borang Google yang diadaptasi daripada Hassan et al., (2016). Seramai 344 ibu bapa pesakit kanak-kanak asma di Hospital USM yang memenuhi kriteria inklusi dan pengecualian telah didekati untuk menyertai kajian ini. Data yang dikumpulkan telah dianalisis secara statistik menggunakan perisian SPSS versi 27. Kajian ini menunjukkan bahawa 59.9% daripada responden mempunyai pengetahuan yang lemah, 67.4% mempunyai sikap positif dan 61.3% mengamalkan pantang larang. Tiada korelasi antara pengetahuan dengan sikap ($p=0.663$) dan pengetahuan dan amalan ($p =0.683$) manakala terdapat korelasi antara sikap dan amalan pantang larang. Akhir sekali, terdapat perkaitan antara faktor sosiodemografi [umur ($p=0.000$) dan agama ($p =0.015$) manakala tiada perkaitan antara faktor sosiodemografi [etnik ($p=0.069$), dan tahap pendidikan ($p =0.831$)] dan amalan pantang larang pemakanan asma dalam kalangan ibubapa pesakit kanak-kanak asma di Hospital USM. Kesimpulannya, ibubapa pesakit kanak-kanak asma mempunyai pengetahuan yang rendah, sikap positif dan amalan pantang larang pemakanan asma yang tinggi. Pekerja kesihatan perlu mempelajari lebih lanjut tentang bagaimana budaya mempengaruhi diet dan makanan yang boleh membahayakan kesihatan pesakit asma dan mempromosikan perubahan dalam pengetahuan, sikap, dan amalan pantang larang ini.

**Knowledge, Attitude and Practices of Asthma Food Taboos and Its Associated Factors
Among Parents Of Asthmatic Children In Hospital Universiti Sains Malaysia**

ABSTRACT

Asthma food taboos are a set of food prohibitions that may cause asthma attacks. These will impact how well asthma is treated medically. The objectives of this study aim to determine the knowledge, attitude and practice of asthma food taboos and its associated factors among parents of asthmatic children in Hospital Universiti Sains Malaysia. A cross-sectional study design was conducted in this study. Data was collected using a Google Forms. A total of 344 parents with asthmatic children in Hospital USM who fulfilled the inclusion and exclusion criteria were approached to participate in this study. Data collected were statistically analysed using the SPSS software version 27.0. This study showed that 59.9% of respondents have poor knowledge, 67.4% have a positive attitude and 61.3% practice asthma food taboos. There was no correlation between knowledge with attitude ($p= 0.663$) and knowledge with practice ($p=0.683$) meanwhile there was a correlation between attitude and practice ($p=0.001$). Lastly, there was an association between sociodemographic factors [age ($p=0.000$), and religion ($p=0.015$)] with the practice of asthma food taboos. Meanwhile, there was no association between sociodemographic factors [ethnicity ($p=0.069$), and educational level ($p=0.831$)] with the practice of asthma food taboos among parents with asthmatic children in Hospital USM. It is concluded that parents with asthmatic children have poor knowledge, positive attitudes and high practice of asthma food taboos. Health practitioners must learn more about how culture influences diets and foods that could be harmful or fatal for people with asthma and promote changes in knowledge, attitude, and practice of these asthma food taboos.

CHAPTER 1

INTRODUCTION

This research aims to investigate the level of knowledge, attitude, and practice of asthma food taboos and its association factors among parents with asthmatic children in Hospital Universiti Sains Malaysia (HUSM). The first section of this final year project started with the background of the study about asthma food taboos. This is followed by a problem statement, research questions, research objectives, and the hypothesis of the study. Finally, the operational definitions of the important terms used are described and the significance of the study.

1.1 Background of The Study

The respiratory system is the network of organs and tissues that help in breathing. This system helps the body absorb oxygen from the air so, organs can work. It also cleans waste gases, such as carbon dioxide, from the blood. The respiratory system has many functions. Besides, helps with inhaling and exhaling, it allows us to talk and smell, warms air to match the body temperature and moisturizes it to the humidity level of the body' needs, delivers oxygen to the cells in the body. Additionally, it expels waste gases, including carbon dioxide, and safeguards our airways against harmful substances and irritants (World Health Organization: WHO & World Health Organization: WHO, 2024). The tissues and organs in the respiratory system are susceptible to a wide range of illnesses. Some are brought on by airborne irritants, such as germs or viruses that can infect us. Others come about as an outcome of ageing or illness. One of the illnesses that can affect the respiratory system is asthma disease, a chronic (long-lasting) disease that affects the lungs' airways. The tubes that let air into and out of the lungs are called airways. The airways may occasionally swell and become narrow if somebody has asthma. As a result, it is more difficult for air to leave airways when people with asthma exhale (Hashmi et al., 2023)

According to The Global Asthma Report (2018), a chronic condition known as asthma affects millions of kids throughout the world. Among children aged 5 to 14 years, it was listed as one of the top ten causes of disability-adjusted life years. It has been demonstrated that children with poor asthma management experience poor health outcomes, decreased quality of life, and even mortality (Asher & Pearce, 2014). Clinically, asthma is characterised by paroxysms of dyspnea, coughing, and wheezing. Physiologically, asthma is characterised by a broad constriction of the airways, which may be resolved naturally or because of therapy (Asher & Pearce, 2014).

In Malaysia, according to the National Health and Morbidity Survey (NHMS IV) in 2011 by the Ministry of Health of Malaysia, about 6.4% of the Malaysian population has asthma. This is higher than the finding in NHMS III, 2006 which has a prevalence of asthma at 4.2%. The highest prevalence for those aged 75 years and above at 10.7% followed by children aged 5 to 9 years old at 8.5% and age group 15-19 years old at 8.1%. It mostly affected people in Putrajaya which reported a case at 10.4% while the least affected people in Penang with a reported case at 3.5%. Chinese had the lowest percentage of asthma (4.0%; 95% CI, 3.3 - 4.9), compared to the Malays (7.2%; 95% CI, 6.7-7.8), the Indian (7.6%; 95% CI, 6.1 - 9.5) and other Bumiputera (7.8%, 95% CI, 6.4 - 9.6) (Manual et al., 2012).

There are four levels of asthma condition which are controlled asthma, uncontrolled asthma, difficult-to-treat asthma, and severe asthma. According to the latest WHO data published in 2020 Asthma Deaths in Malaysia reached 1,013 or 0.60% of total deaths. The age-adjusted death rate is 3.65 per 100,000 population ranks Malaysia 98 in the world (Dinglasan et al. 2022). Before children can control their asthma on their own, the role of parents is crucial in helping them during the early stages of development (Sukri et al., 2020). But some parents neglect this role because of misconceptions regarding asthma and its medication and treatments such as anxiety over steroid side effects consequences, reliance, food consumption, and

abstinence from physical activity to enhance the management of asthma, which may impact children's attitude toward asthma (Trojanowaska et al., 2021).

There are three main ethnic groups in Malaysia, which are Malay, Chinese and Indian. Malay children have the highest prevalence of asthma and the worst asthma control. The Malays also make up the country's ethnic majority. The results differed from those in other nations, such as the United States and the United Kingdom, where asthma morbidities impact greater numbers of members of ethnic minorities (Manual et al., 2012).

Foods and drinks that people avoid from consuming for a variety of reasons are known as food taboos. Food taboos probably exist in one form or another in every society. Dietary rules and regulations may govern particular phases of the human life cycle and may be associated with special events such as a menstrual period, pregnancy, childbirth, lactation, weddings, funerals, etc (Mohamad & Ling, 2016).

According to an article by Meyer-Rochow (2009), the word food taboo is used to describe the deliberate avoidance of a specific food item "for reasons other than simple dislike from food preferences". Food taboos can help protect against health hazards in some situations while helping conserve the environment or protect limited resources. Community health beliefs include dietary taboos, which represent values connected to a particular activity or behaviour. However, within the unique social-ecological system of the setting from which they develop, there are more direct connections between health beliefs and food taboos. For instance, health beliefs may guide adaptive food limitations. Finally, both ideas are adaptable and can alter in response to shifting political, social, and economic conditions (McNamara & Wood, 2019).

Most of these taboos are passed down from generation to generation and are based on learned behaviour, which is generally picked up through parental and family guidance or by watching close friends and relatives who engage in the behaviour (Mohamad & Ling, 2016).

Most Asian nations understand that eating is the most significant national preoccupation and the leading cause of asthma attacks since they always encountered local beliefs when treating diseases. The opinions regarding which foods should or should not be consumed when ill are frequently held with a strong conviction and are regarded as being just as crucial for healing as the doctor's advice. Even though for some families, a concern for food can become an obsession, it would be unhelpful to reject such theories on the basis that there is insufficient medical proof or that they are difficult to understand (Hassan et al., 2016).

1.2 Problem Statement

Strong beliefs of food taboos among people cannot be avoided because of it practised from generation to generation. According to Meyer Rochow (2009), there are dietary taboos in almost every human society. Most faiths proclaim certain foods appropriate for human consumption while declaring others unfit, which makes sense given that some foods might be harmful to us if we eat them. Whether they are supported by science, dietary taboos frequently serve to safeguard the individual. For instance, if it had been discovered that certain allergies and depression are related, food products that were later found to be the cause of the allergies might have been banned (Meyer-Rochow, 2009).

Misconceptions and antiquated notions, such as food taboos, are frequently held by asthmatic patients, particularly in Asia (Mohamad & Ling, 2016). It will in some way impact how well asthma is treated medically. Poor knowledge of asthma disease can lead parents to practice asthma food taboos in managing their children's asthma attacks (Sukri et al., 2020). Asian nations, in any treatment of disease always come across local beliefs, so most of them realized that eating is the most important national preoccupation cause of asthmatic attack (Hassan et al., 2016).

Higher knowledge of asthma food taboos is associated with positive attitudes and internal locus of controlling asthma with food taboos (Hassan et al., 2016). As we know avoiding the things that can trigger asthma is important, but we must not neglect to seek treatment by only depending on food restriction (Mengie et al., 2022). Furthermore, many of them did not seek treatment if asthma can be controlled by food taboos but unfortunately, they will seek treatment if they realize that they have misconceptions about food taboos and the importance of medical treatment that can cause uncontrollable to severe asthma (Dinglasan et al., 2022).

There was a past research study about the prevalence of practice asthma food taboos among asthmatic patients in Kuantan, Pahang state, Malaysia. A total of 46% of asthmatic patients were practising asthma food taboos and it is concluded that the practice of asthma food taboos among patients in Malaysia is high (Hassan et al., 2016). This study endeavoured to determine the knowledge, attitude and practice of asthma food taboos and its associated factors among parents of asthmatic children in Hospital Universiti Sains Malaysia, HUSM Kelantan.

1.3 Research Questions

1. What is the level of knowledge towards asthma food taboos among parents of asthmatic children in HUSM?
2. What is the level of attitude toward asthma food taboos among parents of asthmatic children in HUSM?
3. What is the level of practice towards asthma food taboos among parents of asthmatic children in HUSM?
4. Is there any correlation between knowledge, attitude and practice of asthma food taboos among parents of asthmatic children in HUSM?

5. Is there any association between selected sociodemographic factors (age, ethnicity, occupation status, educational level and religion) and the practice of asthma food taboos among parents with asthmatic children in HUSM?

1.4 Research Objectives

Research objectives describe what researchers expect to achieve at the end of a research project or study.

1.4.1 General objective

This study aims to determine the level of knowledge, attitude and practice of asthma food taboos and its associated factors among parents of asthmatic children in Hospital Universiti Sains Malaysia, HUSM.

1.4.2 Specific objectives

1. To determine the level of knowledge towards asthma food taboos among parents of asthmatic children in HUSM.
2. To determine the level of attitude towards asthma food taboos among parents of asthmatic children in HUSM
3. To determine the level of practice towards asthma food taboos among parents of asthmatic children in HUSM.
4. To examine the correlation between knowledge, attitude and practice of asthma food taboos among parents of asthmatic children in HUSM.
5. To examine the association between selected sociodemographic factors (age, ethnicity, educational level and religion) and practice of asthmatic food taboos among parents with asthmatic children in HUSM.

1.5 Research Hypothesis

Hypothesis 1 : There is no correlation between knowledge, attitude and practice of asthma food taboos among parents of asthmatic children in HUSM. (**H₀**).

: There is a correlation between knowledge, attitude and practice of asthma food taboos among parents of asthmatic children in HUSM. (**H_A**).

Hypothesis 2 : There is no association between selected sociodemographic factors and practice of asthma food taboos among parents of asthmatic children in HUSM. (**H₀**).

: There is an association between selected sociodemographic factors and practice of asthma food taboos among parents of asthmatic children in HUSM. (**H_A**).

1.6 Conceptual and Operational Definitions

Table 1 Operational Definition and Conceptual Definition.

TERMS	CONCEPTUAL DEFINITION	OPERATIONAL DEFINITION
Asthma	A chronic (long-lasting) disease that affects the lungs' airways is asthma. The tubes that let air into and out of your lungs are called airways. The airways may occasionally swell and become narrow if you have asthma. As a result, it is more difficult for air to	In this study, asthma disease refers to children who have asthma disease and have been treated and attend Klinik Pakar Perubatan (KPP), Klinik Rawatan Keluarga (KRG), Pediatric clinic, and pediatric ward 6 Selatan in

	leave your airways when you exhale (Cleveland Clinic, 2020).	Hospital Universiti Sains Malaysia, HUSM.
Food taboos	Onuorah and Ayo (2003) defined food taboos as a codified set of rules about which foods or combinations of foods may not be eaten. The origin of these prohibitions and commandments is varied. In some cases, these taboos are a result of health considerations or other practical reasons. Food taboos are also known because of human symbolic systems (Onuorah & Ayo, 2003).	Food taboos in this study refer to any food that parents practice to control their children's asthma attacks.
Children	Every human being below the age of eighteen years unless, under the law applicable to the child, the majority is attained earlier. In Malaysia, section 2 of the Child Act 2001 defines "child" as a person who is under the age of 18 years (Tengku Zainudin & Abdul Rahim, 2013).	In this study, children refer to a boy or girl at age birth until 18 years old who has asthma disease.

<p>Knowledge of asthma food taboos</p>	<p>In the context of asthma food taboos knowledge, it refers to the information that an individual has about asthma food taboos, and the possible associated factors contributing to asthma attack. Associated factors and asthma food taboos knowledge is very important for making decisions about asthma disease (Urrutia-Pereira et al., 2018).</p>	<p>This study is defined as any kind of information, awareness, or familiarity that the person gained by experience, heard from somebody else, education, their grandparents, parent's belief, culture or religion related to asthma food taboos. In this study, good knowledge is defined by scores above the mean while poor knowledge is defined by scores below the mean (Hassan et al., 2016).</p>
<p>Attitude of asthma food taboos</p>	<p>A particular feeling or way of thinking about something (Collins, 2023).</p>	<p>This study refers to the way that people think or behave which is related to asthma food taboos. A positive attitude is defined by scores above the mean while a negative attitude is defined by scores below the mean (Hassan et al., 2016).</p>
<p>Practice of asthma food taboos</p>	<p>To do or engage in frequently or usually and to learn or become proficient (Collins, 2023).</p>	<p>This study refers to rehearsing a behaviour over and over, engaging in performing actively related to asthma food taboos.</p>

		Refers to the question ‘Do you practice any kind of food taboos in your daily meals and drinks to avoid asthmatic attack? those who answered ‘Yes’ meant practice and ‘No’ meant non-practice.
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1.7 Significant of The Study

This research reveals the level of knowledge, attitude and practice of asthma food taboos and its association factors among parents of asthmatic children in Hospital Universiti Sains Malaysia. Knowledge about asthma disease and its control among parents is crucial. It must be at a good level of knowledge because if we have a good knowledge about managing asthma disease, we can change our attitude, perception and practice towards any taboos that can lead to complications of asthma disease. Furthermore, children with poor asthma control have poor health outcomes (Searle et al., 2017).

Asthma currently has no known cure however, medication can help manage the symptoms so we can have a regular, active life like another normal person. Regarding asthma food taboos that we often hear like people having asthma cannot eat cold vegetables, nuts, cold or ice drink. Because it will trigger asthma attacks. In addition, sociocultural factors have been reported to influence the understanding of asthma and self-management. For example, asthma self-management is influenced by one’s perception of asthma which may vary between ethnic groups due to diverse cultures (Ramdzan et al., 2019). For instance, during the fasting period, Muslims would adjust their medication to enable them to fast as some Muslims are taught the use of an inhaler invalidates the fast (Aydin et al., 2014)

There is only one study done at Kuantan district to assess the knowledge, attitude and practice of asthma food taboos among asthmatic patients and the result shows that 46% of respondents admitted practising taboos in their diet to reduce or prevent asthma attacks. From that research, it is concluded that the practice of asthma food taboos is high among asthma patients. The concerned prevalence of asthma food taboos can lead to severe asthma attacks because of misconceptions or misunderstandings about how important medical treatment towards asthma disease. (Hassan et al., 2016). There is only one study done to assess the knowledge, attitude and practice of asthma food taboos among asthmatic patients. However, there is no study done to assess it among parents with asthmatic children. Estimating their knowledge about food taboos and their practice is important for healthcare services to do effective educational strategies and awareness programs to promote changes in practice and attitudes toward food taboos also improving health outcomes and asthma control among children. Hopefully, the information gathered from this study can be used in identifying the factors associated with knowledge, attitude and practice of asthma food taboos. On the other hand, this study's findings can be used as a baseline and reference for future studies.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The literature review was developed to present the existing body of knowledge regarding knowledge, attitude and practice of asthma food taboos and its association factors among parents of asthmatic children in Hospital Universiti Sains Malaysia (HUSM). In this literature review, previous research regarding this topic with different opinions of researchers will be discussed and elaborated to broaden our knowledge regarding this topic. The outcome of previous research will be discussed and synthesised to help educational and health publicity promote attitudes and practices regarding asthma food taboos changes in the future.

2.2 Asthma Disease

Asthma is a chronic disease that affects the airways in the lungs. The airways are tubes that carry air in and out of our lungs. If we have asthma, the airways can become inflamed and narrowed at the same time. This can make it harder to breathe and exhale. It also can be life-threatening if it cannot be resolved immediately (World Health Organization: WHO & World Health Organization: WHO, 2024).

Asthma food taboos are a local and cultural belief of food that can trigger asthma attacks. According to The Global Asthma Report (2018), a chronic condition known as asthma affects millions of kids throughout the world. Among children aged 5 to 14 years, it was listed as one of the top ten causes of disability-adjusted life years. It has been demonstrated that children with poor asthma management experience poor health outcomes, decreased quality of life, and even mortality (Asher & Pearce, 2014). Clinically, asthma is characterised by paroxysms of dyspnea, coughing, and wheezing. Physiologically, asthma is characterised by a broad constriction of the airways, which may be resolved naturally or because of therapy.

In Malaysia, about 6.4% of the Malaysian population has asthma (Manual et al., 2012). Asthma control was also found to be the poorest among Malays (35.7%), followed by Indians (33.5%) and Chinese (10.6%) (Ahad & Ming Khoo, 2017).

Clinically, asthma is characterised by paroxysms of dyspnea, coughing, and wheezing. Physiologically, asthma is characterised by a broad constriction of the airways, which may result in inflammation and bronchoconstriction so, there is an intermittent airflow obstruction, resulting in increased work of breathing that can make someone experience shortness of breath. (Crowford et al., 2022).

2.3 Factors Influence Asthma Attack

It has come to the forefront that asthma has a significant immune system component in addition to the acute episodes of asthma attacks that typically cause wheezing and occasionally irreversible losses in lung function. Numerous immune cells and mediators have been assigned roles. While not always present, there is a discernible correlation between atopy and asthma. Asthma is more common among atopic persons, and certain allergies are mostly responsible for this predominance (Toskala & Kennedy, 2015). But not everyone who is atopic goes on to get asthma, and not everyone who has asthma has noticeably higher allergic reactions. With increased serum immunoglobulin E (IgE) levels, excessive mast cell production of allergic mediators, eosinophil infiltration into the lungs, inflammation in the airways, and distorted T helper 1 (Th1) and Th2 responses, dysregulated immunity appears to play a role in the development of asthma. Through the use of anti-inflammatory drugs such as inhaled glucocorticoids, an approach for the long-term treatment of asthma includes reducing chronic lung inflammation (Toskala & Kennedy, 2015).

Several environmental risk factors have been identified to increase the risk of developing asthma such as exposure to air pollution and tobacco smoke as well as occupational

risk factors. In addition, atopy, stress, and obesity. Asthma and obesity may be related, according to theories based on immunological pathways and elevated airway inflammation common to both conditions. These mechanisms may converge to increase airway inflammation, skew asthma toward a more difficult-to-control phenotype, and modify the response to medication, notably the glucocorticoid (GC) response, in addition to raising the chance of developing asthma (Schochet et al., 2021). All can increase the risk for asthma in genetically susceptible persons.

Although there has been much research on the connection between food allergies and asthma, the precise nature of this association between the two atopic disorders remains unclear. Infants with food allergies are more likely to experience anaphylaxis, food-induced asthma attacks, and asthma itself. It has also been demonstrated that a patient's diagnosis of both food allergies and asthma affects the severity of their condition, increasing their chance of experiencing severe asthmatic episodes. Therefore, doctors need to comprehend the connection between these two disorders to safely treat and manage these children (Foong et al., 2017).

The study was done on the use of aerosolized meals in performed bronchial challenges in children with asthma and confirmed IgE-mediated food allergies. In this study, children who avoided certain foods (fish, milk, eggs, chickpeas, and buckwheat) nevertheless experienced worsening symptoms of chronic asthma when exposed to those foods in the environment (i.e., families cooked with the allergenic foods at home). However, the child's symptoms improved and they required less inhaled corticosteroid treatment after the families stopped preparing the allergenic foods at home (Roberts et al., 2002).

2.4 Food Taboos

Food taboos are often foods and drinks that people refrain from consuming for some reason. Food taboos are a formalised set of guidelines that specify which meals or food combinations are off-limits, according to an article by Onuorah & Ayo (2003). These prohibitions and commandments have a variety of historical roots. These taboos can occasionally be the result of practical considerations or health issues. Human symbolic systems are also responsible for the existence of food taboos. The majority of faiths deem some foods safe for human eating while declaring others unfit, according to an article by Meyer-Rochow (2009) dietary guidelines and restrictions may apply to specific times in the human life cycle and may be connected to noteworthy occasions like menstruation, pregnancy, childbirth, and lactation. In most Asian cultures, this idea is used to cure asthma (Meyer-Rochow, 2009).

People still maintain these eating customs and beliefs because they are deeply ingrained in their society. A change in eating habits and beliefs can occasionally be forced by difficult economic times and conflict. People tend to put their views aside in such circumstances and consume whatever is biologically safe to survive. However, the majority of people will revert to their previous opinions once things are back to normal (Onuorah & Ayo, 2003).

2.4 Knowledge of Asthma Food Taboos

A past study about asthma food taboos highlighted that the knowledge of asthma food taboos practitioners among asthmatic patients in that study was 67.4% (Mengie et al., 2020). This draws concern since a lot of literature reviews claim that most asthma food taboos bring more health problems rather than benefits to practitioners (Azizi,1990; *Australian Asthma Handbook*, 2009). The high prevalence of asthma food taboos practice could be due to cultural and traditional beliefs (Chan & Norliza, 2003; Koehler & Leonhaeuser, 2008; Connors et al., 2001).

The lack of good knowledge on asthma food taboos is due to strong multicultural beliefs on any kind of taboos which has been practised from generation to generation but since nutrition and health education took place, it slowly reduced the knowledge of asthma food taboos in the community (Raimi et al.,2022).

According to several studies (Jerret & Costello, 1996; Peterson-Sweeney et al., 2003; Santati et al., 2003; Trollvik & Severinsson, 2004), parents' knowledge of asthma food taboos also influenced them to make decisions based on trial and error, which can result in the practice of asthma food taboos strategies because they were not given enough information through asthma action plans. Higher asthma knowledge was also linked to favourable attitudes and an internal focus on controlling asthma (Sukri et al., 2020).

2.5 Attitude of Asthma Food Taboos

Attitudes about food taboos vary among individuals. Mostly food security, age and local knowledge about cultural and traditional beliefs influenced the individual having a positive attitude towards food taboos (Sukri et al., 2020). Religion does not most affect the individual having a positive attitude towards food taboos. Not all the attitudes on food taboos are related to religion. It is more connected to the culture or traditional beliefs (Koehler & Leonhaeser, 2008; Connors et al., 2001). Further analysis, (Multiply logistic regression) showed that the variables age, educational level, knowledge, and attitude were significantly associated with the practice of asthma food taboos. The attitude toward asthma food taboos was not related to age factor (Zepro, 2015) but a recent study (Hassan et al., 2016) found that none of the sociodemographic factors were significantly associated with attitude towards asthma food taboos. Meanwhile, the attitudes were significantly associated with the practice of asthma food taboos (Mengie et al., 2022).

2.6 Practice of Asthma Food Taboos

There was a past research study about the prevalence of practice asthma food taboos among asthmatic patients in Kuantan, Pahang state, Malaysia. A total of 46% of asthmatic patients were practising asthma food taboos and it is concluded that the practice of asthma food taboos among patients in Malaysia is high and those who have a good knowledge and positive attitude toward asthma food taboos will practice asthma food taboos (Hassan et al., 2016). This raises concerns because numerous evidence reviews have indicated that most food taboos related to asthma worsen health rather than helping practitioners (Azizi,1990; *Australian Asthma Handbook*, 2009). Due to cultural and traditional beliefs, food taboos may contribute to the high frequency of asthma (Chan & Norzila,2003; Koehler & Leonhaeuser, 2008; Conner et al., 2001).

Lack of nutritional and health education on asthma, as well as inadequate treatment and management, maybe the cause of the increased frequency of dietary taboos associated with this condition. Several studies (Jerret & Costello, 1996; Peterson-Sweeney et al., 2003; Santati et al., 2003; Trollvik & Severinson, 2004) stated that parents made decisions based on ‘trial and error’ (which can lead to the practice of asthma food taboos) strategies because they had been provided with insufficient through asthma action plans (Searle et al., 2017).

2.7 Factor Affecting Practice Regarding Asthma Food Taboos

Many factors will affect practice regarding asthma food taboos. The factors that will be highlighted in this study are age, religion, ethnicity, and educational level.

2.7.1 Age

A recent study found that there was a significant association between age and practice of asthma food taboos which is more prone in the elderly group (Hassan et al., 2016). This

might be due to Asian culture which is different from Western culture. A few decades ago, in Asian society taboos were synonymous with vulnerable groups. They are very committed and obedient to all kinds of food taboos since during their time, it was very difficult to access healthcare services, and poverty made the cost of treatment not affordable to them (Meyer-Rochow, 2009). Food taboos have also been linked to the mother's age; an Ethiopian study found that older women follow food taboos more than younger women (Ramulondi et al., 2021).

2.7.2 Religion

Religion does not most affect the individual having a positive attitude towards food taboos. Not all the attitudes on food taboos are related to religion. It is more connected to the culture or traditional beliefs (Koehler & Leonhaeser, 2008; Connors et al., 2001). A recent study shows different religions have different opinions about asthma food taboos. Christian (88.3%) followed by Hindu (76.2%), Buddhist (57.1%), others (50%) and last Islam (43.1%). There was a significant association between religion and practice but not in knowledge and attitude of asthma food taboos (Hassan et al., 2016). Most religions declare certain food items are fit and others are unfit for human consumption (Meyer-Rochow, 2009). For example, Muslims would modify their medicine during the fasting season so that they may fast, since some Muslims believe that using an inhaler breaks the fast (Sukri et al., 2020).

2.7.3 Ethnicity

A recent study shows Malay is the majority of respondents who practice asthma food taboos with 88.9% (Hassan et al., 2016). Practising asthma food taboos is more connected to cultural and traditional beliefs (Koehler & Leonhaeuser, 2008; Connors et al., 2001). Due to cultural differences, an individual's opinion of asthma might differ throughout ethnic groups, which can have an impact on how they manage their asthma (Sukri et al., 2020).

2.7.4 Educational Level

Educational level influenced individual perception towards practising asthma food taboos. A recent study shows result higher education levels (37.7%) have less practice in asthma food taboos meanwhile low education levels have high practice in food asthma taboos (50.8%). Since higher education people have better knowledge of asthma disease, they are practising the good and correct treatment for treating asthma disease (Hassan et al., 2016). Prior research has suggested that there are negligible variations in the observance of dietary taboos between those with and without formal education. Once more, there is no obvious link between education and eating beliefs among educated women. Education was proven to be a significant predictor of health in a Zepro (2015) study, where women with formal education recognised the value of receiving appropriate asthma medication rather than adhering to dietary taboos (Zepro, 2015).

2.8 Theoretical and Conceptual Framework of The Study

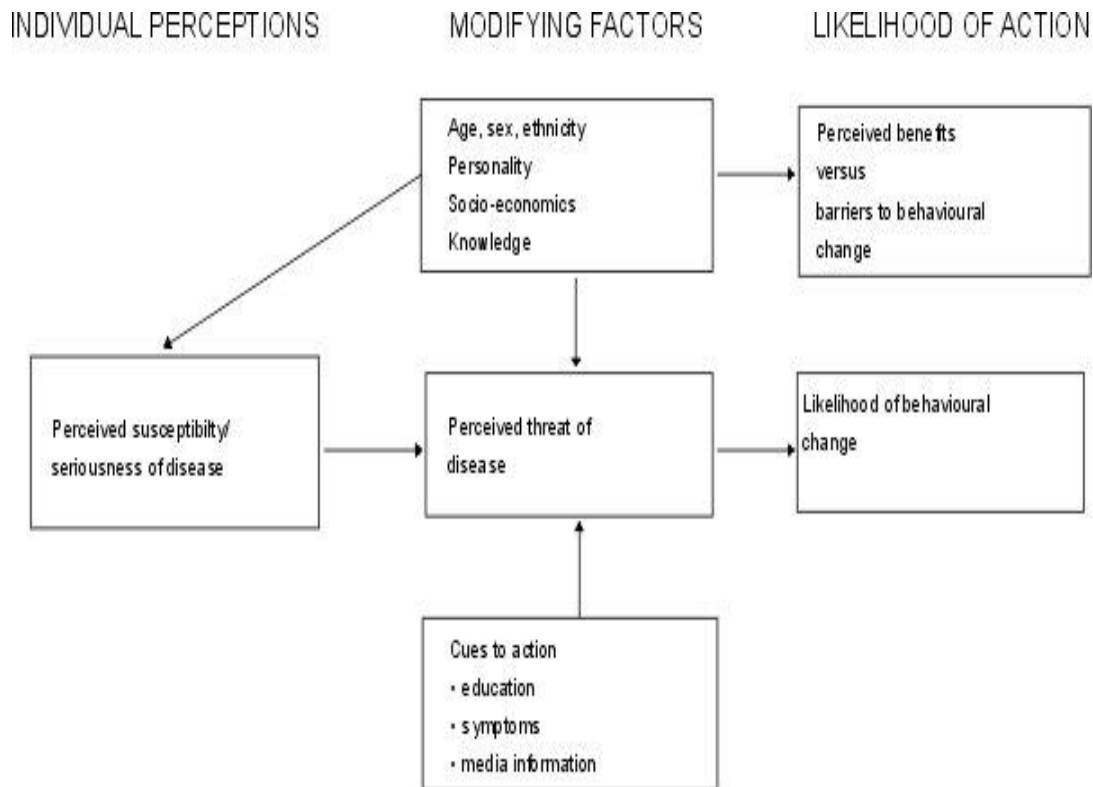


Figure 2. 1 The Health Belief Model was adopted by Bruce et al. (2018).

One theoretical approach to understanding health-promoting behaviours is the Health Belief Model (HBM). This model has been deemed appropriate for and has been selected as the theoretical framework for this study. HBM is the most frequently used theory in health education and health promotion to describe change and continuity of health-related behaviours as well as to conduct a framework for health behaviour interventions (Norman & Conner, 2017).

The HBM is made up of four constructs which are perceived susceptibility, perceived severity, perceived benefits and perceived barriers. It proposes that people will take preventive action to reduce the risk and avoid illness if their perceived susceptibility is high. In perceived severity, people would believe the condition could cause potentially serious consequences and how it impacts their lives. Besides, people will adopt behaviour changes if they believe that a

particular course of action would reduce the susceptibility or severity or lead to other positive outcomes which we call perceived benefits. For the perceived barriers, people perceive few negative attributes related to the health action that would discourage the desired behaviour change (Jones et al., 2015).

Perceived risk, described as risk susceptibility in the model, is theorized as an important construct for explaining health behaviour. Behavioural and social science theories offer a framework for understanding the rationale for why people participate in health protection, health-risking, and health-compromising activities. To that end, theory development and application are useful for understanding factors that influence the adoption or maintenance of health behaviours, especially when used to plan, implement, and evaluate health promotion programs (Sulat et al., 2018). Factors that influence involvement in health promotion behaviours include the multiple categories of individual, familial, social, and cultural (DiClemente, Crosby & Kegler, 2002).

Using the HBM, this study explores modifying factors which are sociodemographic factors that include age, ethnicity, occupation, educational level and religion as well as knowledge of asthma food taboos among parents with asthmatic children. Additionally, the HBM can examine if it moderates the relationship between the mentioned variables' attitudes and practice of asthma food taboos. This exploratory study will be conducted to identify factors that impact knowledge, attitude, and practice of asthma food taboos among parents with asthmatic children.

For the outcome, the participants will give either positive or negative attitude, practice or non-practice regarding asthma food taboos. Overall, this concept is available to determine knowledge, attitude and practice of asthma food taboos and its associated factors among parents of asthmatic children in Hospital USM.

Individual Perception

Modifying Factors

Likelihood of Action

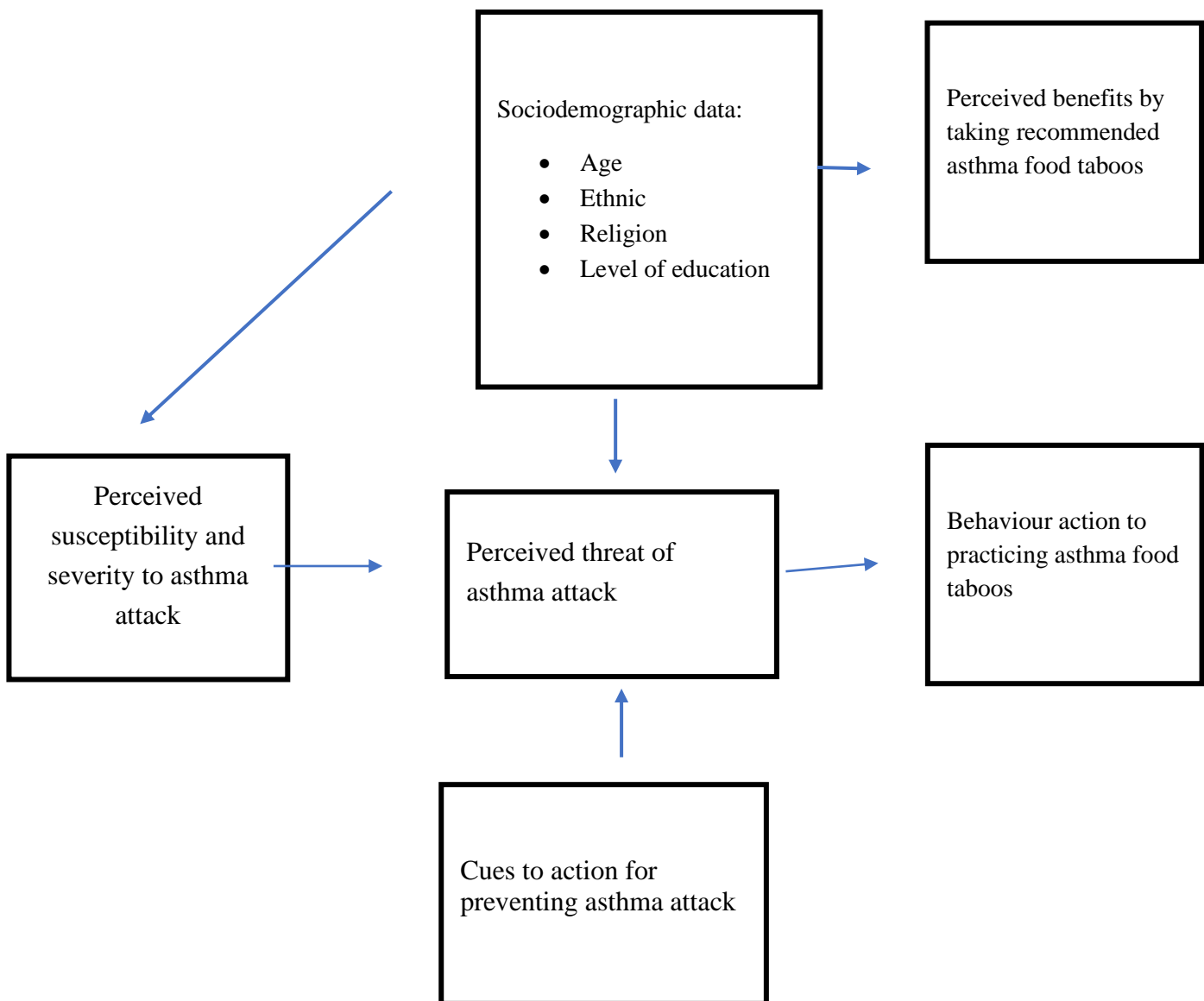


Figure 2. 2 Conceptual framework of the study for knowledge, attitude and practice of asthma food taboos among parents of asthmatic children adopted from Bruce et al. (2018).

CHAPTER 3

METHODOLOGY AND METHODS

3.1 Study Design

The study used a cross-sectional study design. The cross-sectional design is a descriptive study, data are collected on the whole population at a single point of time to examine variables of interest (Kendra Cherry, 2022). This allows the researcher to measure the outcome and the exposure of the respondents at the same time based on the researcher's objective. The objective is to determine the level of knowledge, attitude and practice of asthma food taboos and its association factors among parents of asthmatic children in Hospital Universiti Sains Malaysia (HUSM).

3.2 Study Location

This study was conducted at Klinik Pakar Perubatan (KPP), Klinik Rawatan Keluarga (KRK), Pediatric clinic and Pediatric ward, 6 Selatan of Hospital Universiti Sains Malaysia, Kubang Kerian.

3.3 Study Duration

The duration of the data collection is from January until March 2024 and the study was conducted for one year from October 2023 until August 2024.

3.4 Study Population

This study was conducted among parents of asthmatic children that attend Klinik Pakar Perubatan (KPP), Klinik Rawatan Keluarga (KRK), Pediatric clinic and Pediatric ward, 6

Selatan of Hospital USM within the data collection period that fulfils the inclusion and exclusion criteria.

3.5 Selection Criteria

Inclusion Criteria	Exclusion Criteria
1. Have children with asthma disease	1. Parents is underlying psychiatric disease
2. Have children with asthma disease in the range age at between 2 years old and 17 years old.	2. Parents with asthmatic children attending boarding school.
3. Able to understand and respond in the Malay language.	
4. Parents and asthmatic children live together	

3.6 Sampling Method

This study used a convenience sampling method. Convenience sampling is a method of collecting samples by taking samples that are conveniently located around a location of study (Edgar & Manz, 2017). The researcher approached every member of the target population that fulfils the criteria and is available in KPP, KKK, pediatric clinic and paediatric ward, 6 Selatan.