

**PARENTAL KNOWLEDGE AND AWARENESS  
OF FOOD ALLERGIES AMONG THEIR  
CHILDREN AT HOSPITAL PAKAR UNIVERSITI  
SAINS MALAYSIA (HPUSM)**

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SAINS MALAYSIA (HPUSM)**

by

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**Dissertation submitted in partial fulfilment of the requirements  
for the degree of  
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## DECLARATION

I hereby declare that this dissertation is the result of my own investigations, 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 for teaching, research and promotional purposes.



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Siti Zulaikha Binti Zainuddin

Date: 1<sup>st</sup> August 2025

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## **LIST OF ABBREVIATIONS**

FPIES	Food Protein-Induced Enterocolitis Syndrome
HBM	Health Belief Model
HPUSM	Hospital Pakar Universiti Sains Malaysia
HRQoL	Health-Related Quality of Life
IgE	Immunoglobulin E
QoL	Quality of Life
STPM	Sijil Tinggi Persekolahan Malaysia
USM	Universiti Sains Malaysia

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**PENGETAHUAN DAN KESEDARAN IBUBAPATERHADAP ALAHAN  
MAKANAN DALAM KALANGAN ANAK-ANAK MEREKA DI HOSPITAL  
PAKAR UNIVERSITI SAINS MALAYSIA (HPUSM)**

**ABSTRAK**

Alahan makanan merupakan masalah kesihatan awam yang semakin meningkat dan memberi kesan besar terhadap kualiti hidup kanak-kanak. Kajian ini dijalankan untuk menilai tahap pengetahuan dan kesedaran ibubapa mengenai alahan makanan dalam kalangan anak-anak mereka di Hospital Pakar Universiti Sains Malaysia (HPUSM). Kajian ini melibatkan 218 orang ibubapa yang dipilih melalui persampelan mudah dan telah menjawab soal selidik yang dibangunkan berdasarkan kajian terdahulu. Hasil kajian menunjukkan bahawa sebanyak 26.1% ibubapa mempunyai tahap pengetahuan yang baik, diikuti oleh 39.0% yang berada pada tahap sederhana, manakala 34.9% lagi berada pada tahap pengetahuan yang rendah. Dari segi kesedaran pula, 32.6% responden menunjukkan tahap kesedaran yang tinggi, 53.7% berada pada tahap sederhana, dan 13.8% mempunyai tahap kesedaran yang rendah. Analisis korelasi menunjukkan hubungan positif sederhana yang signifikan antara pengetahuan dan kesedaran ( $r = 0.519$ ,  $p < 0.001$ ). Dapatan kajian ini menunjukkan keperluan untuk intervensi pendidikan yang lebih berkesan kepada ibubapa bagi meningkatkan pemahaman mereka tentang alahan makanan, termasuk simptom, punca, pencegahan, dan rawatan. Peranan pendidikan kesihatan adalah penting dalam memperkasakan ibubapa dengan maklumat yang tepat dan strategi pengurusan yang sesuai. Kajian ini mencadangkan pelaksanaan program pendidikan berasaskan bukti untuk menyokong pengurusan alahan makanan yang lebih baik di kalangan kanak-kanak.

**PARENTAL KNOWLEDGE AND AWARENESS OF FOOD ALLERGIES  
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MALAYSIA (HPUSM)**

**ABSTRACT**

Food allergies are an increasingly common public health concern that significantly affects the quality of life of children. This study aimed to assess the level of parental knowledge and awareness of food allergies among their children at Hospital Pakar Universiti Sains Malaysia (HPUSM). A cross-sectional study was conducted among 218 parents who were selected through convenience sampling and completed a structured questionnaire based on previous validated research. Findings revealed that 39.0% of parents had a moderate level of knowledge, 26.1% had good knowledge, while 34.9% demonstrated poor knowledge. In terms of awareness, 53.7% had moderate awareness, 32.6% had good awareness, and 13.8% had poor awareness. A significant moderate positive correlation was found between knowledge and awareness scores ( $r = 0.519$ ,  $p < 0.001$ ). The results highlight the need for effective educational interventions aimed at improving parental understanding of food allergy symptoms, causes, prevention, and management. Education plays a vital role in equipping parents with accurate information and appropriate management strategies. This study recommends implementing evidence-based educational programmes to support better food allergy management among children.

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Introduction**

This research proposal aims to assess the level of parental knowledge and awareness regarding food allergies among their children at Hospital Pakar Universiti Sains Malaysia (HPUSM). This chapter will cover the background of the study, followed by the problem statement, research questions and objectives, the hypotheses of the study, the conceptual and operational definitions of key terms used in the research, and finally, the significance of the study.

### **1.2 Background of Study**

Allergy is the body's immune response to foreign substances commonly found in the environment, triggering a hypersensitive reaction. An allergic reaction is an exaggerated immune response to a harmless substance (Dougherty et al., 2024), primarily mediated by immunoglobulin E (IgE) antibodies and the activation of mast cells and basophils. This triggers the body's inflammatory reaction to what it views as a threat, which results in symptoms including swelling, redness, itching, sneezing, and breathing difficulties (Vitte et al., 2022). Food allergy is an immune reaction to proteins in food and can be IgE-mediated or non-IgE-mediated (Lopez & Mendez, 2024).

The genetic predisposition to allergic conditions that often run in families is referred to as atopy. The development of allergies is influenced by both environmental factors and genetic predispositions (Institute for Quality and Efficiency in Health Care,

2017). Food allergies have a complex aetiology, resulting from a combination of both environmental and genetic factors (Brough et al., 2021). Additionally, a study by Brough et al. (2021) noted that environmental factors such as dietary components, gut microbiota, and the timing of allergenic food introduction can impact the risk of food allergies.

Parental knowledge is critical in managing food allergies. Parental education is essential because it increases awareness about various healthcare issues, which is enhanced through education. Therefore, the higher the level of education, the greater the capacity to make knowledgeable healthcare choices and prevent associated issues. Also, food allergies constantly present challenges for parents. Parents must enhance their understanding of allergens and their sources. (Kostecka et al., 2022). Despite the increasing number of children with food allergies, there has not been an improvement in the accessibility of trustworthy information on the subject, which can affect children's healthy growth and development (Kostecka et al., 2022). Parental knowledge and awareness of allergy symptoms, causes, and mechanisms are important for the proper prevention and treatment of allergies in children (Tengku Azhar et al., 2020). However, misconceptions and insufficient understanding of allergy mechanisms can lead to delayed treatment (Tengku Azhar et al., 2020).

### **1.3 Problem Statement**

The rise in food allergies over the past few decades has become a major global health concern. In Western countries, the prevalence of diagnosed food allergies among children was reported to be as high as 10% (Loh & Tang, 2018). Additionally, there was increasing evidence of a growing incidence in developing nations, with countries such as

China and those in Africa showing comparable rates of medically diagnosed food allergies to those seen in the West. A notable finding was that East Asian or African children born and raised in Western environments had a higher likelihood of developing food allergies compared to Caucasian children (Loh & Tang, 2018). This highlighted the importance of the interaction between genetic predisposition and environmental factors (Loh & Tang, 2018).

In Southeast Asia, epidemiological data indicate that the prevalence of food allergy (FA) among children is generally low compared to Western countries. Egg allergy is the most commonly reported across all age groups, while shellfish allergy is more prevalent among older children and adolescents, particularly in Singapore and the Philippines (Tham et al., 2017). Peanut allergy remains uncommon in most Southeast Asian countries, with the exception of Japan. Studies show that FA prevalence in Singaporean children under the age of three ranges from 1.1% to 3.1%, with shellfish allergy affecting up to 5.2% of adolescents (Tham et al., 2017). In Thailand, reported rates are similarly low, with egg allergy at 0.2% and shellfish allergy between 0.3% and 0.9%. A latitude-dependent trend is observed, with higher rates of FA in northern Asian countries such as Japan and Korea, and lower rates in tropical Southeast Asian nations (Tham et al., 2017).

In Malaysia, a study indicated that food allergies were a significant and growing concern among children, with an upward trend in prevalence (Yadav & Naidu, 2015). Cow's milk and eggs were identified as the most common allergens among Malaysian children (Yadav & Naidu, 2015). A strong link was also established between atopic dermatitis and IgE-mediated food allergies, affecting up to 37% of children. Children

under the age of two showed higher sensitisation rates to cow's milk and egg white when compared to older children aged two to ten years, who exhibited lower rates of sensitisation (Yadav & Naidu, 2015). These findings suggested a heightened vulnerability to allergens at a younger age.

Despite the high incidence of food allergies, parental knowledge and awareness regarding the recognition and management of such conditions remained inadequate. A study by Tengku Azhar et al. (2020) revealed that many Malaysian parents lacked sufficient understanding of the causes, symptoms, and management of food allergies in children. This knowledge gap often results in misconceptions and potentially harmful practices, such as unnecessary dietary restrictions or inappropriate management approaches. Furthermore, this lack of awareness could delay diagnosis and treatment, increasing the risk of severe outcomes such as anaphylaxis (Tengku Azhar et al., 2020). Although some parents were aware of food allergies in general, many did not possess a comprehensive understanding of their symptoms, triggers, or effective management strategies. This limitation hindered their ability to provide appropriate care and safeguard their children's well-being. It underscored the urgent need for improved educational efforts aimed at equipping parents with accurate and practical knowledge to manage food allergies effectively (Taha et al., 2024). Parental knowledge and awareness of health-related issues also play a vital role in a child's physical and mental well-being (Hossain et al., 2022).

Food allergies had a considerable impact on the quality of life (QoL) of children, especially as they grew older. Health-related quality of life (HRQoL) tended to decline

over time, particularly in cases involving multiple allergies, severe reactions, or a history of anaphylaxis (Drakouli et al., 2023). These conditions affected children's emotional health, daily routines, and social interactions. The need for strict dietary restrictions and the fear of accidental exposure often led to increased levels of stress and anxiety, not only in children but also among their parents. These challenges became more pronounced with age, highlighting the necessity for effective management strategies to reduce their impact (Kılıç et al., 2023).

Despite advancements in medical care and the availability of appropriate therapies, many children continued to experience recurring symptoms due to insufficient parental knowledge and awareness. It was therefore crucial to address this gap, as effective management of childhood food allergies relied heavily on the understanding and actions of parents. Those who lack adequate knowledge might fail to recognise allergy triggers, overlook early signs of allergic reactions, or feel unprepared to implement proper preventive measures. For those aforementioned reasons, this study aimed to determine the association between parental knowledge and awareness of food allergies among their children at HPUSM.

#### **1.4 Research Questions**

The research questions for this study are as follows:

- i. What is the level of parental knowledge of food allergies among their children at HPUSM?
- ii. What is the level of parental awareness of food allergies among their children at HPUSM?

- iii. Is there any relationship between parental knowledge and awareness of food allergies among their children at HPUSM?

## **1.5 Research Objectives**

Research objectives were divided into general and specific objectives.

### **1.5.1 General Objective**

To determine parental knowledge and awareness of food allergies among their children at HPUSM.

### **1.5.2 Specific Objectives**

The specific objectives for this study are as follows:

- i. To determine the level of parental knowledge of food allergies among their children at HPUSM
- ii. To determine the level of parental awareness of food allergies among their children at HPUSM
- iii. To examine the relationship between parental knowledge and awareness of food allergies among their children at HPUSM.

### **1.5.3 Research Hypothesis**

**(H<sub>0</sub>):** There is no association between parental knowledge and awareness of food allergies among their children at HPUSM.

**(H<sub>1</sub>):** There is an association between parental knowledge and awareness of food allergies among their children at HPUSM.

## **1.6 Significance of the study**

Although some parents had a basic understanding of food allergies, many were not fully aware of the critical steps required during an allergic reaction. A study conducted in Saudi Arabia found that while a number of parents were aware of food allergies, there remained a need for more comprehensive information to prevent severe reactions in children (Alotaibi et al., 2020). The study emphasised the importance of parents acquiring a deeper understanding of how to respond appropriately during emergencies related to food allergies. This suggested that, although parents might have possessed some knowledge, their overall comprehension often had notable limitations.

This study aimed to assess the current level of parental knowledge and awareness regarding food allergies among their children at HPUSM, Kelantan, Malaysia. The significance of this research lies in its potential to identify existing gaps in understanding and provide a foundation for evidence-based interventions. By highlighting specific areas where parental knowledge is insufficient, the findings can directly inform clinical practice and guide the development of targeted health education programmes. These initiatives are essential in equipping parents with the necessary information and skills to recognise early symptoms of allergic reactions, ensure appropriate management, and seek timely medical care. Furthermore, the results can support the formulation of standardised clinical

protocols and enhance collaborative efforts between healthcare professionals and families. Strengthening this partnership is expected to foster a more supportive and safer environment for children with food allergies, ultimately reducing their health burden and improving their quality of life. Additionally, the study offers valuable insights for future research and public health initiatives, while assisting HPUSM in refining clinical practices and parental outreach strategies to achieve better health outcomes for affected children and their families.

### 1.7 Definitions of Operational Terms

The operational terms used in this research proposal are shown below :

**Table 1.1:** Conceptual and Operational Definitions

	<b>Conceptual Definition</b>	<b>Operational Definition</b>
Food Allergy	Food allergy is defined as an immune reaction to proteins in the food and can be immunoglobulin IgE-mediated or non-IgE-mediated (Lopez & Mendez, 2024)	In this study, the parents will be asked if their children have encountered any allergies to food substances.

Child	Every human below the age of 18, unless the relevant laws recognise an earlier age of majority (United Nations, 1989)	In this study, a child refers to any individual aged 1 to 12 years, as this is the specific age group targeted for the study.
Parent	A person who gives birth to or raises a child (Cambridge Dictionary, 2024)	In this study, adults who have a child under their care will be included.
Knowledge	Skill in, understanding of, or information about something, which a person gets by experience or study (Cambridge Dictionary, 2024)	In this study, parental knowledge will be measured using a structured questionnaire adopted from Tengku Azhar et al. (2020) to evaluate parents' understanding of food allergies among their children.
Awareness	Knowledge that something exists or understanding of a situation or subject at present based on information or experience (Cambridge Dictionary, 2024)	In this study, parental awareness will be measured using a structured questionnaire adopted from Tengku Azhar et al, (2020) to assess parents' awareness of food allergies among their children

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter provides a general description of the definition of allergy and food allergy, the aetiology of food allergy, the signs and symptoms of food allergy, and the prevalence of childhood food allergies according to age group. Also, this chapter will provide a general review of the literature on parental knowledge of food allergies, parental awareness of food allergies, and the association between parental knowledge and awareness of food allergies. The last section of this chapter will describe the theoretical and conceptual framework used in this study.

#### **2.2 Definition of Allergy and Food Allergy**

Allergy is a condition in which the body's immune system reacts abnormally to typically harmless substances found in the environment, leading to a hypersensitive response or reaction (Dougherty et al., 2024). It is primarily mediated by IgE antibodies, which activate mast cells and basophils, triggering allergic symptoms (Dougherty et al., 2024). Food allergies is defined as adverse health effects caused by a specific immune response to certain food components, typically proteins (Lopez & Mendez, 2024). These can trigger reactions and can be classified as either IgE-mediated or non-IgE-mediated (Barni et al., 2020). Systemic anaphylaxis is a severe and potentially life-threatening allergic reaction that can occur rapidly after exposure to an allergen, particularly in the IgE-mediated category (Peddi et al., 2024). Although it is often linked to IgE-mediated reactions, it can also occur due to other immunologic mechanisms like immune complexes