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## **Food Allergy: Perspective among undergrads at Puncak Alam**

**Roswati Nordin <sup>1</sup>, Norliza Ismail <sup>2</sup>, Syafawati Abu Hanifah <sup>2</sup>, Anggriyana Tri Widiyanti <sup>3</sup>**

<sup>1</sup> Centre for Nursing Studies, Faculty of Health Sciences, Universiti Teknologi MARA, Puncak Alam Campus, 42300, Puncak Alam, Selangor, Malaysia,

<sup>2</sup> Ministry of Health, Malaysia,

<sup>3</sup> Faculty of Health Science, 'Aisyiyah Bandung University, Indonesia

roswati2809@uitm.edu.my, olapatadine@gmail.com, sssya\_061088@yahoo.com, anggriyana.unisa@gmail.com  
Tel: +60193725859

### **Abstract**

Food allergy is an excessive reaction initiated by the immune system to a particular food. Food allergies usually occur in young children. However, with the current increase in the adult and elderly population, changes in environment and lifestyle have profoundly changed the epidemiology of food allergies. Therefore, the study aims to identify undergrads' perspectives on food allergies. The researcher used a descriptive study design with the convenience sampling method. The results showed that the knowledge of the undergrads about food allergy was good and adequate. In conclusion, the undergrad student has a great perspective on food allergies.

**Keywords:** Food Allergy, Knowledge, Attitude, Practice

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### **1.0 Introduction**

Food allergy is a common disease affecting up to 10% of the population, and its Prevalence has been increasing over the past decades (Gupta et al., 2019). A food allergy is a reaction of the immune system in response to proteins in food. According to the Malaysian Allergy and Immunology Association (MOH, 2019), the incidence of allergies is increasing at an alarming rate. The statistics revealed that up to 50 per cent of the World's teenagers were already suffering from airway allergies such as allergic rhinitis and asthma. If these statistics were extrapolated, an expected seventy to eighty per cent of teenagers would be afflicted by airway allergy by the end of this decade, with increased morbidity and mortality (Wai et al., 2021).

Food allergy is an excessive reaction initiated by the immune system to a particular food. It is widespread worldwide and is becoming a significant public health problem (Baser, 2017). The symptoms of food allergic reactions vary in type and severity among individuals. However, the symptoms can affect all body organs; skin, gastrointestinal tract, and respiratory system, and in severe cases, can be life-threatening. Ghazali (2019) explains that allergies are abnormal reactions in the human body against food triggered by the body's immune system. This is because allergic reactions to the food consumed can cause a detrimental effect and be fatal to the patient.

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In parallel with the significant increase in fatal cases of allergic reactions, the issue of food allergy has attracted the attention of public health authorities, particularly among the community, such as undergrad students. The high knowledge, attitude, and practice of young adults regarding food allergies have a significant effect on preventing possible reactions. For this purpose, this study has been conducted to measure the food allergy knowledge, attitude, and practice among undergrad students at UiTM Puncak Alam.

## 2.0 Literature Review

### 2.1 Food allergies

Statistics provided by the Malaysian Association of Allergy and Immunology (MSAI) explain that the Malaysian population recorded 15 to 20% suffering from allergy symptoms and is expected to increase up to 50% in the next ten years (MOH,2019). In addition, MSAI explains that 50 million people in the United States have a record of suffering from the same allergic symptoms. The disease is caused not only by the intake of certain foods but also by pollen, dust, or insect bites such as bees or poisonous insects and allergies to medicines (Weaver, 2016; American Academy of Allergy Asthma and Immunology (2020). According to Sharrada (2014), the ratio of potentially allergic symptoms is one in five people in Malaysia. Statistics show that between 45 to 55% of the population in Malaysia also suffer from allergies and incompatibilities with food (Prabhusaran et al., 2018).

Individuals with food allergies must be careful when consuming foods others prepare. The public's lack of knowledge about food allergies increases the risk of an allergic reaction. Malaysian Allergy and Immunology Association (MSAI) showed that most Malaysians need more knowledge or information to seek allergy treatment. Prevention should be the primary goal for allergy problems since a cure is yet to be found (Ghazali, 2018). In Malaysia, common food allergens are food, followed by tree nuts and soy.

Some food intolerance is often characterized as food allergies because of the same symptoms. Naturally, it can harm the body, but most are not very serious. However, some food allergies can cause severe effects life-threatening, such as anaphylaxis. MSAI studies showed that many Malaysians need to learn more about anaphylaxis, a severe consequence of food allergies. Food allergies generally affect all age stages. It happens when a body's immune system does not fit some food types, resulting in harmful chemical reactions and one or more allergic reactions. They should know about medical treatment during an allergic reaction (Burks et al., 2018).

### 2.2 Knowledge on food allergies

Food allergy symptoms most commonly begin with itching or tingling of the lips, palate, tongue, throat, swelling of lips or tongue, a sensation of tightness in the throat, dysphonia (difficulty in speaking) and a dry cough. In most severe cases, symptoms can progress rapidly to a potentially life-threatening stage involving the cardiovascular system, leading to hypotension and shock. This is known as systematic anaphylaxis (Burks, 2018). Anaphylaxis reaction could be a serious, critical allergic response marked by swelling, hives, down pressure level and expanded blood vessels. In severe cases, an individual can enter shock. If the anaphylactic shock is not treated immediately, it can be fatal. Therefore, with increased allergies, anaphylaxis education should be part of an allergy awareness program (ACAAI 2017).

Nutritious food is a basic need for humans in their survival. Nutritious foods are also essential for physiological needs and supplying the energy the human body needs. However, several sources of such food can affect human life, especially those related to food allergy issues (Ghazali, 2018). There is no cure for allergic reactions; thus, strict rejection of matter foods is predominant in symptom interference (Gracia & Magistris, 2016). Food substance labelling is an internationally recognized risk management tool, and regulative policies are being developed to lower food allergen exposure risk for people with food allergies (Marra et al., 2017).

## 3.0 Methodology

### 3.1 Study design and population

A cross-sectional descriptive design was chosen as it is relevant to the research objectives. The sample populations are among the diploma and degree students at UiTM Puncak Alam.

### 3.2 Sampling methods and sample size

For this study, a convenience non-probability sampling method was used. The sample size was calculated using Krejcie and Morgan's formula (1970). The total population in this study was 220 and degree of accuracy was 0.05, and the calculation determined that the total sample size for this study was 140.

### 3.3 Instrument

This study instrument was adopted and modified by Shafie & Azman (2015); a self-administer questionnaire was distributed to diploma and degree students at UiTM Puncak Alam who met the inclusion and exclusion criteria of the study. The informed consent is taken, and the participants will be given 30 minutes to complete the questionnaire.

### 3.4 Reliability and validity

The instrument was tested in the pilot study for its reliability after obtaining approval from the Ethics Committee (REC/431/18), and Cronbach's alpha value was 0.70, which had been identified. For the validity of the questionnaire, the question was given to three expert contents in these studies, which includes nursing lecturer, medical officers, and dietician lecturer in the faculty.

### 3.5 Analysis methods

The data collected were entered and analyzed using IBM SPSS (Statistical Package for the Social Science) Version 21.0. The researcher used descriptive statistics test such as frequency, mean standard deviation (SD) and the percentage used to examine the objective.

## 4.0 Findings

### 4.1 Level of knowledge on food allergies

Results in table 3 showed that most of the students have basic knowledge about food allergies and can safely consume the foods that cause the allergies if only a tiny amount is consumed, mean=3.89 SD=.74. Food allergy is not common but can be severe; mean=3.86 SD=.95. A food allergy is an exaggerated immune response triggered by eggs, peanuts, milk, or some other specific food (n=116, mean=4.04, SD=.74). Food allergy can initially be experienced as itching in the mouth and difficulty swallowing and breathing (n=126, mean=4.09, SD=.61).

They explained the positive findings that students are aware of sources of food allergy and food allergy signs and symptoms by agreeing with the statements. Most agreed that hidden food allergens are one of the most common causes of food allergy occurrences n=104, 74.3%. The respondents also understood that death is one of the complications of food allergy by most of the students agreed with the statement that a food allergy reaction can cause death (n=118) with a mean=4.14 SD=.72. However, half of the respondents were unsure that food allergens are usually proteins n=78, (55.7%), and nearly half of the students unsure about cross-contact is when raw foods, such as uncooked meat and poultry, touch cooked foods n=67, 47.9% and Individuals with food allergies can safely consume the foods that cause the allergies if only a small amount is consumed n=55, 39.3%

Table 2. Knowledge on food allergies

Items	Mean	SD	Disagree(n)	Unsure(n)	Agree(n)
B1. Individuals with food allergies can safely consume the foods that cause the allergies if only a small amount is consumed.	3.89	.74	8	16	116
B2. Food allergy is not common but can be serious.	3.80	.95	19	13	108
B3. A food allergy is an exaggerated immune response triggered by eggs, peanuts, milk, or some other specific food.	4.04	.74	3	21	116
B4. People with allergies come from families in which allergies are common.	3.59	.80	14	40	86
B5. A food allergy can initially be experienced as an itching in the mouth and difficulty swallowing and breathing.	4.09	.61	3	11	126
B6. Food allergens are usually proteins	3.29	.74	13	78	49
B7. A food allergy reaction can cause death.	4.41	.72	3	19	118
B8. Hidden food allergens are one of the most common causes of food allergy occurrences.	3.86	.60	0	36	104
B9. Cross-contact is when raw foods, such as uncooked meat and poultry, touch cooked foods.	3.42	.60	10	67	63
B10. Individuals with food allergies can safely consume the foods that cause the allergies if only a small amount is consumed.	2.86	.90	48	58	34

\*Descriptive analysis

### 4.2 Attitudes towards food allergies

The findings in table 4 revealed that most of the student did not think that it is their responsibility if people have allergy reactions in their community, n= 102, 72.86% (Mean=2.11, SD 1.04). The students were aware of their need to treat food allergy n=130 seriously; 92.86% agreed with the statement and were also concerned about food allergy n=134, 95.71%. They have positive attitudes toward food allergies and will specially prepare safe food for friends or family members when it is requested, mean=4.16, SD=.72. Other than they agreed to provide special tables where a person with a food allergy can eat safely n=100, 71.43 (mean=3.94 SD=.86). They also have positive attitudes and beliefs, which is most of them agreed that they play an essential role in ensuring the health and safety of people with food allergies n=113 (mean=3.99, SD=.69). In addition, they also believe they are responsible for upgrading themselves about information regarding food allergies, n=118 (mean=4.06, SD=.64).

Table 4. Attitudes towards food allergies

Items	Mean	SD	Disagree (n)	Unsure (n)	Agree (n)
C1. You treat food allergy seriously.	4.14	.60	2	8	130
C2. You concerned about the food allergy among your friend/family.	4.32	.55	0	6	134
C3. You ever thought of any method to prevent food allergic reaction among your friends/family.	3.77	.87	14	24	102
C4. You think that you have the responsibility to inform your friends/family of the presence of food allergens in their food.	4.26	.64	3	6	131
C5. You specially prepare food that is safe for friends/family with food allergy when it is requested.	4.16	.72	6	8	126
C6. We should provide special tables where customers with food allergy can eat safely.	3.94	.86	8	32	100
C7. I do not think it is my responsibility if people with food allergies have allergic reactions in my community	2.11	1.04	102	21	17
C8. I play important role in ensuring the health and safety of people with food allergy.	3.99	.68	2	25	113
C9. I have the responsibility of updating myself on the information regarding food allergy.	4.06	.64	1	21	118

\*Descriptive analysis

### 4.3 Practice towards food allergies

Table 5 explains the practice of food allergy among UiTM Puncak Alam. The study revealed that more than half of the students are unsure of any case of food allergy in your community in the last few months (n=72) and have any plan to produce only nonallergenic food (n=77). An additional 15 students did not agree that any training was provided for them, and 66 needed clarifications about the training regarding food allergies. Nevertheless, most students practice checking the label of food products to find out whether they contain any ingredient that may cause food allergy (n=115, mean=3.93 SD=7.16. In addition, more than half of them also double-checked their meals once ready to make sure no allergens had been inadvertently added (n=93, mean=3.67 SD=7.86), and verify directly with the food allergic person whether expectations had been met (n=93, mean=3.72 SD=7.10). They verified with other people whether a portion of food could be made without allergenic ingredients (n=94, mean=3,73 SD=.655).

Table 5. Practice towards food allergies

Items	Mean	SD	Disagree	Unsure	Agree
D1. There is any case of food allergy at your community in the last few months.	3.18	.859	22	72	46
D2. You have any plan to produce only nonallergenic food.	3.33	.772	27	77	36
D3. There is any training for students about food allergy.	3.04	.804	15	66	59
D4. You used to check the label of food products to find out whether they contain any ingredient that may cause food allergy.	3.93	.716	8	17	115
D5. Once the meal is ready, you double check to make sure no allergens had been inadvertently added.	3.69	.786	12	35	93
D6. After the meal is ready, verify directly with the food allergic person whether expectations have been met.	3.72	.710	5	42	93
D7. You verify with other person whether or not a food can be made without the allergenic ingredients.	3.73	.655	4	42	94

\*Descriptive analysis

## 5.0 Discussions

### 5.1 level of knowledge on food allergies

This study shows that most students have excellent basic food allergy knowledge. The other studies found that knowledge of sources of the allergies is commonly from seafood and shellfish (Shafie & Azman, 2015). On the other hand, a knowledge deficit about food allergies will increase the morbidity and mortality complications from the food allergy without early and proper treatment administered to the patients (Gracia & Magistris, 2016). Besides, this study found that half of the students agreed and were aware of the food allergy signs and symptoms.

Like other studies, death from a food allergy is often related to delayed medication administration (Gupta et al., 2019). From the statements, it is supportive of having students who recognize and treat food allergy reactions. Improving the knowledge and information about food allergy reactions is essential, and its treatment is an important topic that would be a key area to highlight during food allergy education for public awareness. It is also suggested by the previous study to improve the gap of knowledge about the appropriate treatment for food allergy among (Burks, 2018).

### 5.2 Attitudes towards food allergies

Overall, in this study, the students have positive attitudes toward food allergies, such as their need to give treatment for food allergy reactions seriously. However, the finding found that it is not their responsibility if persons develop food allergy reactions in the community. There is a gap between beliefs that they need to treat the food allergy seriously but not acknowledge that it is their responsibility to treat the person with food allergy reactions in the community. It is a challenge for nursing schools and institutions to improve their awareness level by providing more classes and courses related to the roles of students for patients with food allergy reactions. It is supported by a previous study that showed that the lack of information and knowledge could lead to low awareness of food allergies among school health nurses (Burks, 2018).

Most believe and are aware that they play essential roles in providing safe meals to persons with food allergies and get special table for persons with food allergies. Despite these beliefs, it is encouraging that primary food allergy education was a significant predictor of nurses' support of school accommodations for food allergies, namely allergen-free tables (Gracia & Magistris, 2016). This suggestion supported that the education provided may modify students' attitudes toward food allergy. In addition, food allergy education for nursing students should include a discussion of the quality-of-life implications of food allergies that may help to improve attitudes towards persons with food allergies.

### 5.3 Practice towards food allergies

It is vital to apply an appropriate practice related to preparing meals or diet to prevent incidents of food allergy reactions. Is supported by Baser (2017) suggested that it is adequate to have an appropriate practice in the workplace related to the production and service of food to prevent any incidents of food allergic reactions. It was consistent with the finding of these studies. In addition, the food provider must prepare a warning note about the ingredient of the food in the printed menu materials or inform their customers that the food they serve may cause food allergies such as peanuts, shellfish, and eggs (Baser, 2017).

In this study, the findings supported the previous study; most students agreed that they needed to inform the person about the ingredients of the meals they prepared. Food handling and preparation techniques and methods can also reduce the risk of food allergy because the food can be contaminated.

## 6.0 Conclusion & Recommendations

This study investigated the knowledge, attitudes, and practices toward food allergy. As a result, there was good knowledge, attitudes, and practice toward food allergy. According to the study finding, the researchers conclude that most UiTM Puncak Alam students have reasonable and adequate knowledge, attitudes, and practice toward food allergy. This study was done among full-time Diploma and Bachelor students in UiTM Puncak Alam. Future studies can reveal the knowledge, attitudes, and practice toward food allergy among students of different faculties and other institutions and communities outside healthcare institutions and food handlers.

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## Paper Contribution to Related Field of Study

This paper contributes to nursing research.

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