



**University of Babylon
College of nursing**

Assessment of nursing students knowledge about anaphylaxis

A graduation project submitted to the Faculty of Nursing University of
Babylon as part of the requirements for obtaining a Bachelor's degree in
Nursing

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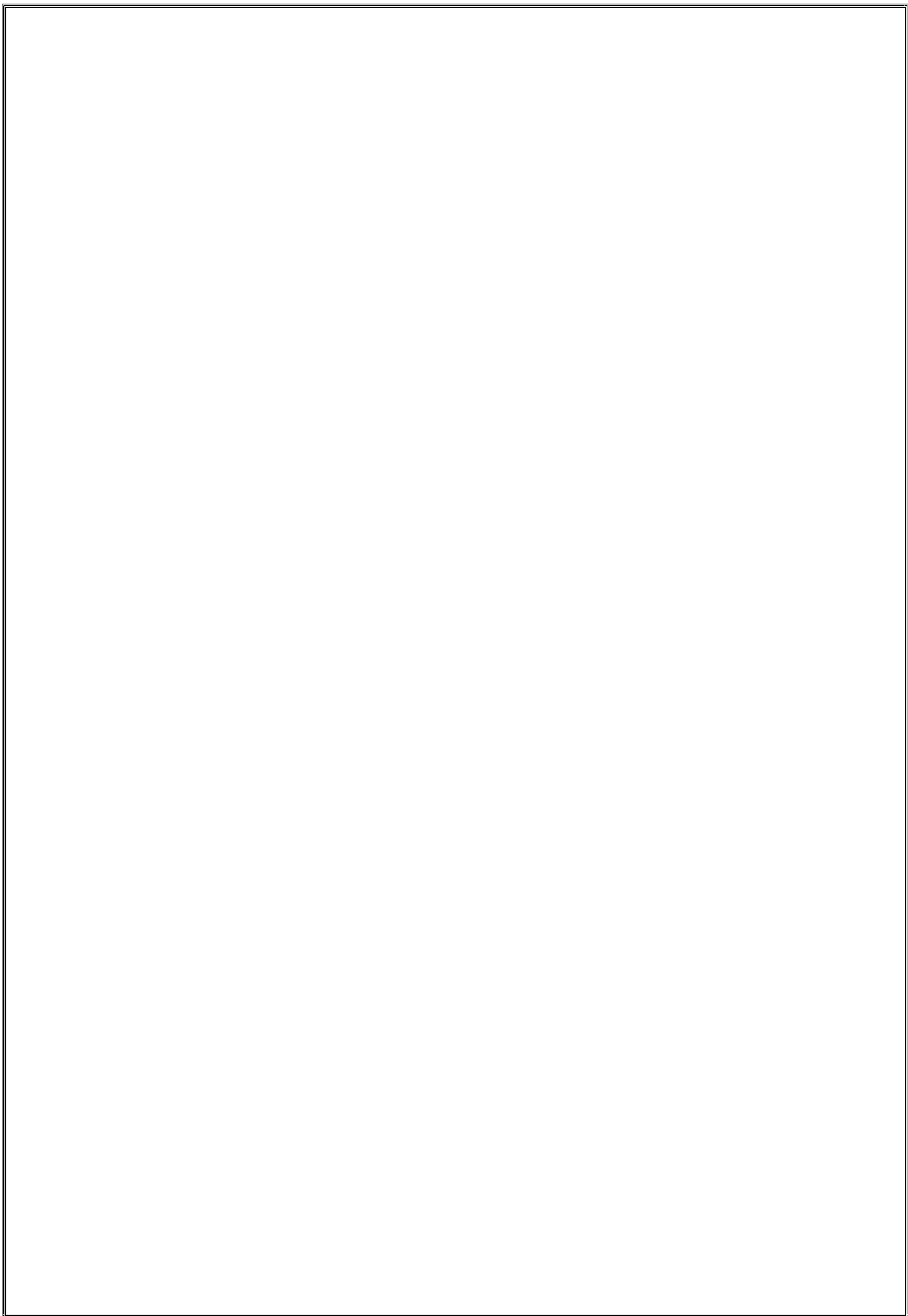
((قُلْ هَلْ يَسْتَوِي الَّذِينَ يَعْلَمُونَ وَالَّذِينَ لَا يَعْلَمُونَ إِنَّمَا يَتَذَكَّرُ أُولُو
الْأَلْبَابِ))

صدق الله العلي العظيم

[سورة الزمر / ٩]

الإهداء

إلى من وهب الحياة وديمومتها..... ربي
إلى قالع حصن خيبر..... الإمام علي (عليه السلام)
إلى من الهمني الصبر والتقوى والإخلاص..... ابي
إلى بحر الحب و روضة الحنان وقلب السعادة امي
إلى شموع الأمل التي انارت لي طريق العلم.... اساتذتي
إلى عنوان الأخوة والمحبة..... زملائي
اهديكم هذا الجهد المتواضع



الشكر والتقدير

الشكر والثناء لله عز وجل أولاً على نعمة الصبر والقدرة على إنجاز العمل فالله الحمد على هذه النعم .

نتقدم بجزيل الشكر والتقدير إلى الدكتورة الفاضلة ... المشرفة

(أ . م . د ميس هادي جبر) .

ولكل ما قدمته لنا من دعم وتوجيه ومعلومات قيمة وإرشاد لإتمام هذا العمل على ما هو عليه

فلها أسمى عبارات الثناء والتقدير .

وكذلك نتقدم بالشكر الجزيل لكل أعضاء الهيئة التدريسية ولا ننسى الطلبة الذين ساهموا في إنجاز هذا المشروع

متمنين لهم التوفيق والنجاح الدائم

وكما نشكر كل من مد لنا يد العون من قريب او بعيد ولو بكلمة او دعوة صالحة.

Abstract:-

Background :-

Anaphylaxis is a severe, potentially life-threatening allergic reaction. It can occur within seconds or minutes of exposure to something you're allergic to, such as peanuts or bee stings.

Anaphylaxis causes the immune system to release a flood of chemicals that can cause you to go into shock — blood pressure drops suddenly and the airways narrow, blocking breathing. Signs and symptoms include a rapid, weak pulse; a skin rash; and nausea and vomiting. Common triggers include certain foods, some medications, insect venom and latex.

Anaphylaxis requires an injection of epinephrine and a follow-up trip to an emergency room. If you don't have epinephrine, you need to go to an emergency room immediately. If anaphylaxis isn't treated right away, it can be fatal.

Objectives:-

This study was conducted to assess the level of knowledge of anaphylaxis and its management at students of the Faculty of Nursing, the third and fourth stages of the University of Babylon.

Methods:-

A pretested structured questionnaire was administered to nursing students. The subjects were asked to answer the questionnaire, which included questions regarding anaphylaxis and its management. total of undergraduate students (101 female) and (40 male) were enrolled in this descriptive study. We used a questionnaire consisting of (150) questions to assess the level of knowledge.

Results:-

The study that conducted on 150 students of nursing college to assessment the knowledge of them about anaphylaxis the detail of results can be shown in this chapter

The highest rate of knowledge was between age group was 21_22 years, 73.3%. While the knowledge in female was more than in male 73.3%. the number of unmarried people was more of married 86.6%. The rate of urban students knowledge were higher than rural students by 66%. It is noteworthy that the main source of information regarding to anaphylaxis was the highest more than one source, and their number was 56 of the 150 participating students with a rate of 37.3%. While the source of medical and health personnel was 48 out of 150 participants, or 32%. And the information from the family, relatives was 5 of the 150 participating students with rate of 3.3%. Finally, fewer students shared their views relying on medical and health personal by 23 or 15.3%. 7 students out of total students which was the lowest 4.7% .

Anaphylaxis can occur from eating common foods such as milk, eggs or shellfish recorded 69.3% yes answer ,regarding medical treatment this table show 73% yes regarding Symptoms of anaphylaxis can occur 42.6% with Shortly after coming in contact with an allergen. the result recorded 56% can lead to death ,regarding Adrenaline is the first line of drug for anaphylaxis the result recorded 66.65 as first line then fluid therapy.

Conclusion:-.

The highest rate of knowledge among the age groups 21-22 years. The literacy rate of urban students was higher than that of rural students by a percentage. The main source of information about anaphylaxis was the highest in more than one source. Evidence of the student's knowledge regarding potentially life-threatening allergies as a result of his or her registration of more than one yes.

Students' knowledge of the possibility of anaphylaxis from eating common foods such as milk, eggs, or shellfish was the highest on record

With regard to the symptoms of anaphylaxis, the highest level of knowledge was recorded, as anaphylaxis appears shortly after contact with the allergen.

With regard to adrenaline being the first line of treatment for anaphylaxis, the score recorded the highest level of knowledge among students as first line treatment and then fluid therapy.

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CHAPTER ONE
INTRODUCTION

1. Introduction

1.1 Definition

Anaphylaxis is a severe, life threatening generalized or systemic hypersensitivity reaction which is characterized by rapidly developing airway and/or breathing and/or circulation problems usually associated with skin and mucosal changes. Currently, more than 25% of total population of India is sensitized to different allergens. Recent studies show that the prevalence and incidence of allergic disorders have increased globally in the past 20 years. Many studies have demonstrated that the most common triggers are drugs in adults, and food in pediatric population. Epinephrine is the first line drug for the treatment of anaphylaxis and several studies conducted previously reveal that there is lack of knowledge regarding its dose and route of administration. There is confusion in selecting first-line drugs for treating anaphylaxis in an emergency situation among health care professionals (HCPs). If severe anaphylaxis occurs, then the time frame for its management is quite limited. As anaphylaxis is a life-threatening condition and can happen at any time, the HCPs should always be prepared to deal with this condition, and knowledge about this dangerous disease should be kept up to date among HCPs. The objective of this study was to assess the knowledge regarding recognition of symptoms, signs, and management of anaphylaxis among HCPs in a tertiary health care hospital and to assess the attitude and practices for the management of anaphylaxis among them (Patnaik *et al.*,2020)

1.2. Signs and Symptoms

As anaphylaxis is a generalized systemic reaction, a wide variety of clinical signs and symptoms involving the skin gastrointestinal and respiratory tracts, and cardiovascular system can be observed. The most common clinical manifestations are cutaneous symptoms including urticarial and angioedema, erythema (flushing and pruritus (itching)). (Webb *et al.*,2016). Patients also often describe an impending sense of death (angor animi). Death due to anaphylaxis usually occurs as a result of respiratory obstruction or cardiovascular collapse, or both. It is important to note that

the signs and symptoms of anaphylaxis are unpredictable and may vary from patient to patient and from one reaction to another. Therefore the absence of one or more of the common symptoms listed in does not rule out anaphylaxis, and should not delay immediate treatment (Lee *et al.*,2018)

Skin

- Urticaria
- Angioedema
- Erythema (flushing)
- Pruritus
- Eczema

Respiratory

- Upper airway
- Nasal congestion
- Sneezing
- Hoarseness
- Cough
- Laryngeal edema
- Lower airway
- Dyspnea
- Cough
- Bronchospasm
- Wheezing

Chest tightness

Cardiovascular

- Hypotension
- Dizziness
- Syncope
- Tachycardia

Gastrointestinal

- Nausea
- Vomiting
- Abdominal pain
- Diarrhea

Neurologic

- Lightheadedness
- Dizziness
- Confusion

Oropharyngeal

- Pruritus, tingling
- Angioedema

Other

- Sense of impending doom
- Anxiety.

The signs and symptoms of anaphylaxis typically develop within minutes after exposure to the offending antigen, but may occasionally occur as late as 1h post exposure. Symptoms usually follow a uniphasic course with resolution of symptoms within hours of treatment. However, between 0.4 and 15% of reactions follow a biphasic course characterized by an asymptomatic period of several hours (1–36 h; mean of 10 h in one case series) (Ellis AK *et al.*,2018) .

1.3.Pathophysiology

Anaphylaxis is typically an IgE-mediated (type 1) hypersensitivity reaction that involves the release of numerous chemical mediators from the degranulation of basophils and mast cells after re-exposure to a specific antigen. IgE crosslinking and resultant aggregation of high-affinity receptors induce the rapid release of stored chemical mediators. These chemical mediators include histamine, tryptase, carboxypeptidase A, and proteoglycans. Via activation of phospholipase A, cyclooxygenases, and lipoxygenases they then form arachidonic acid metabolites including leukotrienes, prostaglandins, and platelet-activating factors (Jimenez-Rodriguez *et al.*, 2018).

The inflammatory response is then mediated by TNF-alpha (tumor necrosis factor), both as a preformed and late-phase reactant. The detailed physiology of these chemical mediators is as follows:

- Histamine increases vascular permeability and vasodilation leading to hypoperfusion of tissues. The body responds to these changes by increasing heart rate and cardiac contraction.
- Prostaglandin D functions as a bronchoconstrictor, with simultaneous cardiac and pulmonary vascular constriction. It also potentiates peripheral vasodilation thus contributing to the hypo-perfusion of vital organs.
- Leukotrienes add to bronchoconstriction, vascular permeability, and induce airway remodeling.

- The platelet activation factor also acts as a bronchoconstrictor and increases vascular permeability.
- TNF-alpha activates neutrophils (as part of stress response leukocytosis) and increases chemokine synthesis.

1.4. Diagnosis

Diagnostic tests

The diagnosis of a specific cause of anaphylaxis may be supported by the results of skin tests and/or in vitro IgE tests. These tests can determine the presence of specific IgE antibodies to foods, medications (e.g. penicillin), and stinging insects. However, for the majority of medications, standardized skin tests and/or in vitro tests are not available. The clinical diagnosis of anaphylaxis can sometimes be supported by the documentation of elevated concentrations of mast cell and basophil mediators such as plasma histamine or serum or plasma total tryptase. However, it is critical to obtain blood samples for these measurements as soon as possible after the onset of symptoms since elevations are transient (Lieberman *et al.*, 2015)

Differential diagnosis

Other diagnoses that might present with signs and/or symptoms characteristic of anaphylaxis should be excluded. The most common conditions that mimic anaphylaxis include: vasovagal reactions (characterized by hypotension, pallor, bradycardia, weakness, nausea and vomiting), vocal cord dysfunction, severe acute asthma, foreign body aspiration, pulmonary embolism, acute anxiety (e.g., panic attack or hyperventilation syndrome), myocardial dysfunction, acute poisoning, hypoglycemia, and seizure. Recurrent episodes of anaphylaxis may suggest underlying systemic mastocytosis. (Ellis *et al.*, 2015)

1.5. Prevention

The first essential step in the prevention of anaphylaxis is identification of the causative agent, if possible. Confirmation of the cause requires referral to an allergist for a skin prick test and, when deemed necessary, in-vitro assessment for the presence of specific IgE antibodies. Referral for skin prick testing is particularly important when no causative agent can be clearly identified by history or for bee or wasp stings, because confirmation of IgE-mediated reactivity is necessary to offer potentially curative immunotherapy. In the case of drug or food allergy, not only must the offending substance be avoided, but the potential for crossreactivity (e.g., cephalosporins in the case of penicillin allergy) must also be recognized. (Gallagher *et al.*, 2019)

Patients should be prescribed, and be instructed in the use of, self-injectable epinephrine (e.g., EpiPen). They should also obtain a Medic Alert bracelet or necklace. Subsequent reactions typically escalate in severity, but they may remain the same or even be diminished. If sufficient time elapses without contact with the triggering agent, a decrease in or loss of sensitivity occurs in a significant number of patients. (Cohen *et al.*, 2018)

1.6.Treatment

Triage any allergic reaction with urgency as they are at risk for rapid deterioration with the development of anaphylaxis, if not already anaphylactic. (Roushan *et al.*,2019)

Airway

Airway management is paramount. Thoroughly examine the patient for airway patency or any indications of an impending loss of airway. Perioral edema, stridor, and angioedema are very high risk, and obtaining a definitive airway is imperative. Delay may reduce the chances of successful intubation as continued swelling occurs, increasing the risk for a surgical airway

Decontamination

After the airway is secured, the decontamination of offending agents (if known) is the next priority to prevent continued exposure and clinical worsening. Remove any stingers, if present. Do not attempt gastric lavage in cases of ingestion as this may not be effective and delays treatment.

Epinephrine

Epinephrine is given through intramuscular injection and at a dose of 0.3 to 0.5 mL of 1:1,000 concentration of epinephrine. Pediatric dosing is 0.01 mg/kg or 0.15 mg intramuscularly (IM) (epinephrine injection for pediatric dosage). Intramuscular delivery has proven to provide more rapid delivery and produce better outcomes than subcutaneous or intravascular. Note if intravenous (IV) epinephrine is to be given, the concentration required is 1:10,000, see the next paragraph. The thigh is preferred to the deltoid when possible. Repeat studies have shown that providers often wait too long before giving epinephrine, it is the treatment of choice and the rapid benefit much outweighs the risks of withholding treatment. While most patients require only a single dose, repeat doses may be given every 5 to 10 minutes as needed until symptoms improve.

IV Fluid Resuscitation

Anaphylaxis induces a distributive shock that typically is responsive to fluid resuscitation and the above epinephrine. One to 2 L or 10 to 20 mL/kg isotonic crystalloid bolus should be given for observed hypotension. Albumin or hypertonic solutions are not indicated.

Adjunctive Therapies

Often when anaphylaxis is diagnosed co-treatment is initiated with steroids, antihistamines, inhaled bronchodilators, and vasopressors. Glucagon can also be used if

indicated. These agents can assist in refractory initial anaphylaxis or aid in the prevention of recurrence and biphasic reactions.

Corticosteroids

Corticosteroids are given for the reduction of length or biphasic response of anaphylaxis. There is minimal literature to support this use specifically in anaphylaxis, but it has been proven effective in reactive airway diseases. Therefore, use, dosages, and proposed mechanism of action mimic those of airway management protocols .

Methylprednisolone (80 to 125 mg IV) or hydrocortisone (250 to 500 mg IV) are the accepted treatments during the acute phase, after which oral treatment of prednisone (40 to 60 mg daily or divided twice per day) is continued for 3 to 5 days. Again, if the source is unknown and/or there is a concern for a prolonged time prior to physician follow up steroid taper up to 2 weeks may be provided. Mineralocorticoid activity is responsible for fluid retention; in those at risk, dexamethasone and methylprednisolone are the preferred agents as they induce the least mineralocorticoid effect.

Antihistamines

Antihistamines are often routinely used; most commonly is H-blocker administration of diphenhydramine 25 to 50 mg IV/IM. While the clinical benefit is unproven in anaphylaxis, its utility is evident in more minor allergic processes. In severe cases, H blockers such as ranitidine (50 mg IV over 5 minutes) or cimetidine (300 mg IV) may also be used in conjunction with H--blocker as there is evidence suggesting histamine has crossover selectivity of receptors. Note that cimetidine has multiple precautions in at-risk populations such as renal or hepatic impaired patients, or those taking beta-blockers. While IV is the initial route during stabilization, once the patient is stabilized they may be switched to oral if continued therapy is desired. blood pressure monitoring is suggested due to the risk of unopposed alpha-adrenergic effects from epinephrine.

Bronchodilators

Bronchodilators are useful adjuncts in patients with bronchospasm. Patients with previous histories of respiratory disease, most notably asthma are at the highest risk. Treated with inhaled beta-agonists are the first-line treatment in wheezing; albuterol alone or as ipratropium bromide/albuterol. If there is refractory wheezing IV magnesium is appropriate with dosage and treatment similar to severe asthma exacerbations.

Vasopressors

Vasopressors may be substituted when a patient requires more doses of epinephrine but has unacceptable side effects from the epinephrine IV infusion (arrhythmia or chest pain). In which case there has been no clear second line pressor identified, treatment guidelines would follow that of any other patient in hypotensive shock.

Glucagon

Glucagon is the reversal agent for beta-blockers and can be used as such if needed in cases where anaphylaxis is resistant to treatment in patients with beta-blockade. Known side effects include nausea, vomiting, hypokalemia, dizziness, and hyperglycemia.

Aim of the study

This study aimed to investigate the level of information related to Assessment of nursing students knowledge about anaphylaxis at Babylon University.

CHAPTER Two

Methodology

Methodology:

A descriptive study design was adopted to achieve the objective of the current study. Preparing the study of the College of Nursing, Babylon University in Hilla, Iraq. The College of Nursing consists of four stages. The random sampling technique was adopted, where the total number of students was (150), the number of students of the Faculty of Nursing was (40) male students and (110) female students in the Faculty of Nursing student for the period from (November 2022 - December 2022).

The first stage and the second stage were excluded because the syllabus in these two stages does not include any information about the disease. To collect study information, an in-depth questionnaire was built on previous studies and relevant literature. It consists of two parts:

Part (1):- This part includes items that focus on student demographic data such as (age, gender, Place of residence and source of information).

Part (2):-Consist of general knowledge questions about the Anaphylaxis

Descriptive approach:

Statistical frequencies and constant tables which are

$$\% = \frac{\text{Frequency}}{\text{Sample size}} \times 100$$

CHAPTER THREE

RESULTS

Results:-

A study conducted on 150 nursing students to assess their knowledge of anaphylaxis, the results of which can be explained in this chapter.

The highest percentage of knowledge was among the age groups 21_22 years, 73.3%. While the knowledge of females was more than 73.3% of males. Unmarried students' knowledge was higher than that of married students, at 86.6%.

The literacy rate of urban students was 66% higher than that of rural students.

It is noteworthy that the main source of information related to anaphylaxis was the highest in more than one source, and their number was 56 out of 150 participating students with a rate of 37.3%. While the source of medical and health personnel reached 48 out of 150 participants, or 32%. Information from family that relatives were 5 of the 150 participating students accounted for 3.3%. Finally, fewer students shared their views on medical and health profile dependence at 23 or 15.3%. 7 students out of the total number of students, which is less than 4.7%.

Table 1: Distribution related to demographical characteristics

Item	Frequency	Percentage (%)
Age		
21-22 years	56	37.3
22 to more years	34	22.6
Gender		
Male	40	26.6
Female	110	73.3
Place of Residents		
Urban	99	66
Rural	51	34
Study phase		

Third	84	56
Furth	66	44
Material status		
Married	20	86.6
Unmarried	130	13.3
The Main Source of Food Allergy information		
More than one source	56	37.3
Medical and Health personnel	48	32
Internet and Social Media	33	22
College study	32	21.3
Family, relatives	5	3.3
News and Media	4	2.6

In Table 2: Show the student's knowledge regarding allergies that can be life threatening, the score recorded as 84% the answer was yes, anaphylaxis can occur from eating common foods such as milk, eggs or shellfish with the score recorded as 69.3% the answer was yes, regarding medical treatment it is shown This table 73% Yes, with regard to medical treatment Outcome recorded acute onset of disease with skin involvement and at least one of the following: Respiratory or cardiovascular symptoms 50.6% recorded acute onset of disease with skin involvement and at least one of the following: Respiratory symptoms or Cardiovascular, as the table shows in relation to anaphylaxis symptoms can occur 42.6% shortly after contact with the allergen, the table also shows the route of administration of epinephrine as first line in subcutaneous anaphylaxis 36%, in relation to follow-up recorded 54% from 1-2 An hour, the recorded score is 56% that can lead to death, with regard to adrenaline being

the first line of anaphylaxis drugs, the score was recorded as 66.65 as the first line and then fluid therapy.

Table 2: Distribution of student knowledge toward the Anaphylaxis N=150

Item	Frequency	Percentage (%)	Mean
1-Do you think that allergy can be life threatening			
Yes	126	84	1.68
No	23	15.3	
2- Anaphylaxis can occur from eating common foods such as milk, eggs or shellfish.			
True	104	69.3	2.08
False	11	7.3	
I'm not sure	34	22.6	
3-Anaphylaxis always requires medical treatment			2.2
True	110	73.3	
False	39	26	
I'm not sure	27	18	
4- Adrenaline is the first line of drug for anaphylaxis			
Yes	100	66.6	1.33
No	50	33.3	
5-The Second-line treatment for anaphylaxis is fluid therapy			
Yes	70	46.6	1.4

No	15	10	
I'm not sure	67	44.6	
6-Antihistamines and corticosteroids are good substitutes for epinephrine in treating anaphylaxis.			
Yes	60	40	1.2
No	28	18.6	
I'm not sure	45	30	

58% of the students agreed that the signs and symptoms of generalized anaphylaxis were hives - angioedema - redness - itching, 33.3% shortness of breath - coughing - wheezing - stridor and 31.3% itching in the areas of the mouth/lips/throat. 50.6% of the clinical criterion for the diagnosis of anaphylaxis is acute onset of an illness with skin involvement and at least one of the following: respiratory or cardiovascular symptoms .42.6% Symptoms of anaphylaxis can occur shortly after contact with an allergen. 49.3% Percentage of students who said they refer anaphylaxis patients to an allergist department 42.6% Percentage of students who said anaphylaxis symptoms can occur shortly after contact with an allergen. . 60.6% of students have never heard of an epinephrine auto-injector (Epipen®). 36% Subcutaneous is the recommended route of administration of epinephrine as the first line of action in anaphylaxis. 34% do not know about the epinephrine re-administration period. 54% of the students said that a patient with anaphylaxis should be followed up 1-2 hours after the reaction. 56% Anaphylaxis can lead to food ingestion

All the results mentioned are shown in the table (3) .

1- Have you ever heard about epinephrine (Epipen®) auto-injector	Frequency	Percentage (%)	Mean
Yes	59	39.3	1.38

No	91	60.6	
2-What is the recommended route of epinephrine administration as first line action in anaphylaxis			
Intravenous	54	35	1.08
Intramuscular	43	28.6	
Subcutaneous	54	36	
3-What are the signs and symptoms of anaphylaxis			
Generalized hives angioedema-flushing-pruritus	87	58	2.9
Itching in areas of mouth/lips/throat	47	31.3	
Dyspnea-cough-wheeze stridor	50	33.3	
Hypotension-tachycardia-syncope	21	14	
Diarrhea-nausea-vomiting-cramp abdominal pain	13	8.6	
4- What is the clinical criterion for diagnosing anaphylaxis			
Acute onset of an illness with involvement of skin and at least one of the following: respiratory or cardiovascular Symptoms	76	50.6	1.52
Acute reduced blood pressure after exposure to known allergen	37	24.6	
At least two of the following involvement after exposure to allergen; skin, respiratory compromise, reduced blood Pressure or gastrointestinal symptoms	65	43.3	
5-Symptoms of anaphylaxis can occur			
Shortly after coming in contact with an allergen	64	42.6	1.28
Hours after coming in contact with an allergen	26	17.3	
Either of the above	60	40	

6-Which department do you referral patients with anaphylaxis			
No need to referral	4	2.6	1.7
Internal medicine	11	7.3	
Dermatology	61	40.6	
Allergy	74	49.3	
Chest diseases	10	6.6	
7- What is the interval of re-administration of epinephrine			
Cannot be re-administered	29	19.3	1.59
5 minutes	30	20	
30 minutes	41	27.3	
don't know	51	34	
8- How long should the patient with anaphylaxis be follow up after reaction			1.8
6-8 hours	37	24.6	
1-2 hours	81	54	
No need for a follow up	11	7.3	
9- Anaphylaxis can lead to death			1.12
Yes	84	56	
No	9	6	
General mean			1.617
			Good

CHAPTER FOUR

DISCUSSION

Discussion

Anaphylaxis is a severe, life-threatening systemic reaction. Mast cells are the main effector cell of the biological response to anaphylaxis with the release of various mediators of inflammation (Frank 2012).

The highest literacy rate was among the 21-22 age group, 73.3% agree with a study conducted by (Baççioğlu, 2013) where the percentage was recorded according to the ages of 18 to 51 who responded to the survey. While the knowledge of females was more than that of males, 73.3% do not agree with the study conducted by Patnaik 2020, as the percentage of 77 (61.6) of the study sample was female. The number of unmarried people was higher than the married ones, 86.6%.

The knowledge rate of urban students was higher than that of rural students at 66% supported by (Patnaik, 2020) scored by 21 (16.8%) rural residents.

It is noteworthy that the main source of information related to anaphylaxis was the highest in more than one source, and their number was 56 out of 150 participating students with a rate of 37.3%. While the source of medical and health personnel reached 48 out of 150 participants, or 32%. Information from family that relatives were 5 of the 150 participating students accounted for 3.3%. Finally, fewer students shared their medical and personal health dependent views at 23 or 15.3%. 7 students out of the total number of students, which was 4.7% .

In addition, the level of knowledge about anaphylaxis was found to be insufficient with many points including diagnosis, management and follow-up. Although the importance of anaphylaxis as a life-threatening reaction was known by nearly all health care providers, slightly fewer of all signs and symptoms were perceived to diagnose anaphylaxis. Similarly, in a survey of pediatricians, nearly half of the respondents did not recognize and treat food-induced anaphylaxis (Krugman, 2006). This lack of knowledge by healthcare providers mirrors previous studies where awareness of anaphylaxis was low in many countries (Kahveci, 2012)

Regarding allergies that can be life threatening Score scored 84% Yes The answer to this score supported by Drupad 2015, where the percentage was 69%

Regarding students' knowledge about medical treatment, the percentage of knowledge is (73.3%) and does not agree with the study conducted by Baççioğlu 2013 where only 44.7% agreed that epinephrine should be given as the first procedure if the patient suspected anaphylaxis.

In terms of students' knowledge of the signs and symptoms of anaphylaxis, the knowledge rate is 58% as generalized angioedema, redness and pruritus and is consistent with the Sibabratta Patnaik 2020 study where the percentage was 53%. Common medications they've seen cause anaphylaxis are penicillins, sulfonamides, cephalosporins, and non-steroidal anti-inflammatory agents.

As explained by Dhruvad, 2015 knowledge related to the treatment of anaphylaxis, this ratio is more similar to the current study of our students.

Although two-thirds of the healthcare providers were able to respond to the anaphylaxis treatment steps, less than half of the group were confident about giving epinephrine as a first measure, and one-third agreed to repeat epinephrine in the absence of response.

Regarding the route of administration of epinephrine as a first line of action in anaphylaxis, the percentage score was recorded as 36% of the subcutaneous route, and this result is contrary to Baççioğlu, 2013 record that the rate of correct administration of epinephrine was very low. In a recent study, even in patients with severe anaphylaxis, only 4% received epinephrine by intramuscular injection, while 8% received it intravenously.

Regarding students' knowledge about the symptoms of anaphylaxis, the percentage of knowledge (42.6%) can occur shortly after coming into contact with an allergen and

agrees with the study conducted by Drupad, 2015 where the percentage was slightly lower than all perceived signs and symptoms for a diagnosis of anaphylaxis.

Similarly, in a survey of paediatricians, nearly half of the respondents did not properly recognize and treat food-induced anaphylaxis .

Regarding the clinical criterion for diagnosing anaphylaxis,the result show 50.6 % Acute onset of an illness with involvement of skin and at least one of the following: respiratory or cardiovascular Symptoms ,this result congruent by Sampson HA, 2006 recorded the survey ended with a case of a child with no previous diagnosis of allergy, undergoing acute onset of cutaneous and respiratory symptoms developing during lunch in the school cafeteria. The clinical scenario fulfills the expert panel criteria for anaphylaxis

Regarding the interval of re-administration of epinephrine,the results show 34% don't know,this results supported by Jackson KD, 2013 that recorded Identifying and addressing the gaps in knowledge regarding diagnosis and management of anaphylaxis is particularly important given the increasing prevalence of food allergies in young children.

Regarding the Anaphylaxis can occur from eating common foods such as milk, eggs or shellfish, the result recorded 69.3% true answer ,supported by Wang, J., 2014 that recorded In terms of precautions that schools can take to prevent unintentional food allergen exposures and allergic reactions, 86% of responders (n = 3781) advised implementing individual healthcare plans for children with food allergies under the guidance of the primary care provider and family in collaboration with the school nurse and school staff . Instituting nut-free policies in schools was suggested by 13%.

Chapter Five
Conclusion
and
Recommendations

Conclusion :

We conclude from our current study the following

- 1.The highest rate of knowledge among the age groups 21-22 years.
- 2.The literacy rate of urban students was higher than that of rural students.
- 3.The main source of information about anaphylaxis was the highest in more than one source. Evidence of the student's knowledge regarding potentially life-threatening allergies as a result of his or her registration of more than one yes.
- 4.Students' knowledge of the possibility of anaphylaxis from eating common foods such as milk, eggs, or shellfish was the highest on record
- 5.With regard to the symptoms of anaphylaxis, the highest level of knowledge was recorded, as anaphylaxis appears shortly after contact with the allergen.
- 6.With regard to adrenaline being the first line of treatment for anaphylaxis, the score recorded the highest level of knowledge among students as first line treatment and then fluid therapy.

Recommendation:

Although the results of the study were somewhat satisfactory, there are some recommendations that students should follow to increase knowledge.

- 1- Students should receive advanced educational programs about disease and vaccination, methods should be determined to provide the most effective education, and efforts should be focused on those who have insufficient knowledge and low acceptance of knowledge.
- 2- Improved education and training of health care providers are necessary for better management of anaphylaxis..
- 3- Roper initial training and periodic review and reinforcement of the steps in the treatment of anaphylaxis is necessary for all health care providers to achieve better patient care.

4- Organize seminars to intensively improve students' knowledge about disease and vaccine

5- Increase the size of the sample

REFERENCES

References

١.A.K. Ellis et al.(2007) Incidence and characteristics of biphasic anaphylaxis: a prospective evaluation of 103 patients *Ann Allergy Asthma Immunol*

٢.Baccioglu (2013)A, Ucar EY. Level of knowledge about anaphylaxis among health care providers. *Tuberk Toraks.* ;61:140–6. – PubMed

٣.Brown SGA, Blackman KE, Heddle RJ(2004) . Can serum mast cell tryptase help diagnose anaphylaxis? *Emerg Med Australas* ; 16: 120-124 Simons F.E.R

٤ .Campbell RL, et al.(2012) Anaphylaxis: Acute diagnosis

Accessed June 27, 2012.

٥.Cohen N.,(2013-2018) Capua T., Pivko-Levy D., Ben-Shoshan M., Rimon A., Benor S. Improved diagnosis and treatment of anaphylaxis in a pediatric emergency department *J Allergy Clin Immunol Pract.* 2019;7:2882–2884.e2. [PubMed]

٦.Ellis AK(2007) , Day JH. Incidence and characteristics of biphasic anaphylaxis: a prospective evaluation of 103 patients. *Ann Allergy Asthma Immunol.* 2007;98(1):64–69. doi: 10.1016/S1081-1206(10)60861-7. - DOI ([https://doi.org/10.1016/s1081-1206\(10\)60861-7](https://doi.org/10.1016/s1081-1206(10)60861-7))

٧.Frank AK.(2012) Allergies, anaphylaxis and systemic mastocytosis. In: Longo DL, editor. *Harrison's Principles of Internal Medicine.* 18th ed. Vol. 2. USA: McGraw Hill; . pp. 2709–10

٨.J.S(1988)Anaphylaxis in pregnancy. *Obstet. Gynecol.* ;71:491–493. [PubMed]

٩. Golden DB (2004) . Patterns of anaphylaxis: acute and late phase features of allergic reactions. *Novartis Found Symp.* 2004;257:101–10. discussion 110-5, 157-60, 276-85. [PubMed]

١٠. H.A. Sampson, A. Muñoz-Furlong, R.L. Campbell, et al 10
Second symposium on the definition and management of anaphylaxis: summary report-second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network Symposium *J Allergy*

١١. *J Allergy Clin Immunol*, 117 (2006), pp. 391-397 10 11 .
Ma LL, Danoff TM, Borish L. Case fatality and population mortality associated with anaphylaxis in the United States. *J Allergy Clin Immunol.* 2014;133(4):1075–83

١٢. Jackson KD (2013) , Howie LD, Akinbami LJ. Trends in allergic conditions among children: United States, 1997–2011. *NCHS Data Brief.* ;121:1–8. [PubMed]

١٣. Jimenez-Rodriguez (2018) TW, Garcia-Neuer M, Alenazy LA, Castell12., Anaphylaxis in the 21st century: phenotypes, endotypes, and biomarkers. *Journal of asthma and allergy.* [PubMed PMID: 29950872]

١٤. Kahveci R (2012) , Bostanci I, Dallar Y. The effect of an anaphylaxis guideline presentation on the knowledge level of residents. *J Pak Med Assoc* ; 62: 102-6

١٥. Krugman SD (2006) , Chiaramonte DR, Matsui EC. Diagnosis and management of food-induced anaphylaxis: a national survey of pediatricians. *Pediatrics* ;118; 554-60. Lee S, Sadosty AT, Campbell RL. Update on biphasic anaphylaxis. *Curr Opin Allergy Clin Immunol.* 2016;16:346–51. [PubMed]

16. Lieberman (2015) P, Nicklas RA, Oppenheimer J, Kemp SF, Lang DM, Bernstein DI, et al. The diagnosis and management of anaphylaxis practice parameter: 2010 update. *J Allergy Clin Immunol* 126: 477-80

17. Patnaik, S., Krishna, S., & Jain, M. K. (2020). Knowledge, Attitude, and Practice regarding Anaphylaxis among Pediatric Health Care Providers in a Teaching Hospital. *Journal of* Pattanaik D, Lieberman P, Lieberman J, Pongdee T, Keene AT. The changing face of anaphylaxis in adults and adolescents. *Ann Allergy Asthma Immunol*. 2018 Nov;121(5):594-597. *Child Science*, 10(01), e224-e229

18. Pattanaik D, Lieberman P, Lieberman J, Pongdee T, Keene AT (2018) . The changing face of anaphylaxis in adults and adolescents. *Ann Allergy Asthma Immunol*. Nov;121(5):594-597

19. Simons (2011) F.E.R. Arduzzo L.R.F. Bilò M.B et al. World allergy organization guidelines for the assessment and management of anaphylaxis . *World Allergy Organ J* . ; 4: 13-37

20. Wang J (2014), Sicherer SH, Nowak-Wegrzyn A. Primary care physicians' approach to food-induced anaphylaxis: a survey. *J Allergy Clin Immunol*. ;114:689–691.

Appendix

Appendix

Part I:-

1- Age:

2- Gender : Male Female

3- Place of residence : Urban Rural

4- Study phase : Third Fourth

5- Marital Status: Unmarried Married

6- The Main Source of Food Allergy information?

Medical and Health personnel

College study

Family, relatives

News and Media

Internet and Social Media

More than one source

Part II:-

Anaphylaxis is an acute, potentially fatal systemic allergic reaction with varied mechanisms and clinical presentations.

1- Do you think that allergy can be life threatening ? Yes No

2- Have you ever met a patient with anaphylaxis?

Yes (How many:) No

3- Have you ever treat a patient with anaphylaxis? Yes No

4- Do you keep epinephrine drug in your department?

Yes No

5-Do you know where the nearest allergy clinic in your area?

Yes (where:) No

6-If you had a mild allergic reaction to an allergen in the past, then you are not at risk for a life-threatening reaction in the future.

True False

7-What are the signs and symptoms of anaphylaxis? (You can select more than one choice)

- Generalized hives-angioedema-flushing-pruritus
- Itching in areas of mouth/lips/throat
- Dyspnea-cough-wheeze-stridor
- Hypotension-tachycardia-syncope
- Diarrhea-nausea-vomiting-cramp abdominal pain
- All of them

8-Symptoms of anaphylaxis can occur:

- Shortly after coming in contact with an allergen
- Hours after coming in contact with an allergen
- Either of the above

9-Anaphylaxis can occur from eating common foods such as milk, eggs or shellfish.

- True
- False
- I'm not sure

10-How long should the patient with anaphylaxis be follow up after reaction?

- 6-8 hours
- 2-1hours
- No need for a follow up

11-What is the clinical criterion for diagnosing anaphylaxis?

- Acute onset of an illness with involvement of skin and at least one of the following:
respiratory or cardiovascular Symptoms
- Acute reduced blood pressure after exposure to known allergen
-

At least two of the following involvement after exposure to allergen; skin, respiratory compromise, reduced blood

- Pressure or gastrointestinal symptoms
- All of them
- None of them

12-Which department do you referral patients with anaphylaxis?

- No need to referral
- Internal medicine
- Dermatology
- Allergy
- Chest diseases
- Anaesthesiolog

13-Which one is the first line medication in the treatment of a subject with anaphylaxis? (Choose only one choice)

- Dopamine
- Epinephrine
- Glucocorticoid (methylprednisolone)
- H1-antihistamine (e.g. diphenhydramine)
- 0.9%(isotonic) saline
- β 2 adrenergic agonist (e.g. salbutamol)

14-Adrenaline is the first line of drug for anaphylaxis?

- Yes
- No

15- The Second-line treatment for anaphylaxis is fluid therapy

- Yes
- No
- I'm not sure

16-What is the interval of re-administration of epinephrine? (Choose one choice)

- Cannot be re-administered
- 5 minutes
-

30 minutes

don't know

17-What is the recommended route of epinephrine administration as first line action in anaphylaxis? (Choose one choice)

Intravenous

Intramuscular

Subcutaneous

18-What is the appropriate intramuscular dose of epinephrine?

0.01 mg/kg of a 1/1000 solution of epinephrine

0.01 mg/kg of a 1/100 solution of epinephrine

0.01 mg/kg of a 1/10.000 solution of epinephrine

I don't know

19- What is the recommended intravenous dose of epinephrine?

1/10.000 epinephrine 0.1 mg/mL

No dilution

1/1000 epinephrine 1 mg/mL

1/100.000 epinephrine 0.01 mg/mL

I don't know

20- Have you ever heard about epinephrine (Epipen®) auto-injector?

Yes

No

21-Antihistamines and corticosteroids are good substitutes for epinephrine in treating anaphylaxis.

True

False

I'm not sure

22-Where is the recommended localisation of epinephrine as intramuscular?

Deltoid muscle (midanterolateral upper arm)

Vastus lateralis (midanterolateral thigh)

Gluteus maximus (buttocks)

I don't know

23- Please number the anaphylaxis treatment steps in order from 1 to 5

- Call emergency
- Place on the back with their lower extremities elevated
- Give high flow supplemental oxygen
- Give beta-2 adrenergic agonist inhalation by nebulizer
- Establish intravenous access and give saline rapidly
- Inject H1-antihistamine and glucocorticoid intravenously
- Assess circulation, airway breathing, mental status and skin
- Inject epinephrine intramuscularly 0.5 mg (adult) or 0.3 mg (child)

24-Anaphylaxis always requires medical treatment.

- True
- False
- I'm not sure.

25-Anaphylaxis can lead to death

- yes
- No
- I'm not sure.

الخلاصة

الخلاصة :- الحساسية المفرطة هي رد فعل تحسسي شديد قد يهدد الحياة. يمكن أن يحدث في غضون ثوان أو دقائق من التعرض لشيء لديك حساسية تجاهه ، مثل الفول السوداني أو لسعات النحل.

تسبب الحساسية المفرطة في إطلاق الجهاز المناعي لنسب عالية من المواد الكيميائية التي يمكن أن تتسبب في حدوث صدمة - ينخفض ضغط الدم فجأة وتضيق الممرات الهوائية ، مما يعيق التنفس. تشمل العلامات والأعراض نبضًا سريعًا وضعيفًا. طفح جلدي وغيثان وقيء. تشمل المثيرات الشائعة بعض الأطعمة وبعض الأدوية وسم الحشرات واللاتكس.

تتطلب الحساسية المفرطة حقنة الإبينفرين ورحلة متابعة إلى غرفة الطوارئ وإذا لم يتم علاج الحساسية المفرطة على الفور ، فقد تكون قاتلة.

الهدف من الدراسة : أجريت هذه الدراسة لتقييم مستوى المعرفة بالحساسية المفرطة لدى طلاب كلية التمريض المرحتين الثالثة والرابعة لجامعة بابل.

منهجية الدراسة: دراسة وصفية شملت (١١٠ طالبة) و (٤٠ طالب). وقد نظمت استبانته مكونه من (٣١)سؤال لتقييم مستوى المعرفة.

النتائج : - الدراسة التي أجريت على ١٥٠ طالباً من كلية التمريض لتقييم معرفتهم بالحساسية المفرطة وكانت أعلى نسبة للمعرفة كانت بين الفئات العمرية ٢١_ ٢٢ سنة ٧٣,٣%. بينما كانت المعرفة عند الإناث أكثر من ٧٣,٣% عند الذكور. كان نسبة معرفة الطلبة غير المتزوجين أكثر من المتزوجين ٨٦,٦%. كان معدل معرفة طلاب الحضر أعلى من طلاب الريف بنسبة ٦٦%.

يشار إلى أن المصدر الرئيسي للمعلومات المتعلقة بالحساسية المفرطة كان الأعلى في أكثر من مصدر ، وكان عددهم ٥٦ من أصل ١٥٠ طالباً مشاركاً بنسبة ٣٧,٣%. في حين بلغ المعلومات الماخودة من مصدر الكوادر الطبية والصحية ٤٨ من أصل ١٥٠ مشاركاً بنسبة ٣٢%. والمعلومات من الأسرة أن الأقارب كانوا ٥ من ١٥٠ طالبا مشاركاً بنسبة ٣,٣%. أخيراً ، شارك عدد أقل من الطلاب وجهات نظرهم بالاعتماد على الشخصية الطبية والصحية بنسبة ٢٣ أو ١٥,٣%. ٧ طلاب من إجمالي الطلاب وهي أقل ٤,٧%.

يمكن أن تحدث الحساسية المفرطة من تناول الأطعمة الشائعة مثل الحليب أو البيض أو المحار سجلت ٦٩,٣% فيما يتعلق بأعراض الحساسية المفرطة يمكن أن تحدث ٤٢,٦% بعد وقت قصير من ملامسة مسببات الحساسية النتيجة التي سجلت ٥٦% يمكن أن تؤدي إلى الوفاة ، فيما يتعلق بالأدرينالين هو الخط الأول من أدوية الحساسية المفرطة ، سجلت النتيجة ٦٦,٦٥ كخط أول ثم العلاج بالسوائل

الاستنتاجات: أعلى معدل للمعرفة بين الفئات العمرية ٢١-٢٢ سنة. كان معدل الإلمام بالقراءة والكتابة بين طلاب الحضر أعلى من معدل الطلاب الريفيين بنسبة مئوية. كان المصدر الرئيسي للمعلومات حول الحساسية المفرطة هو الأعلى في أكثر من مصدر.

كانت معرفة الطلاب بإمكانية الإصابة بالحساسية المفرطة من تناول الأطعمة الشائعة مثل الحليب أو البيض أو المحار هي الأعلى على الإطلاق

فيما يتعلق بأعراض الحساسية المفرطة ، تم تسجيل أعلى مستوى من المعرفة ، حيث تظهر الحساسية المفرطة بعد فترة وجيزة من ملامسة مسببات الحساسية.

فيما يتعلق بكون الأدرينالين هو الخط الأول في علاج الحساسية المفرطة ، سجلت الدرجة أعلى مستوى من المعرفة بين الطلاب كخط العلاج الأول ثم العلاج بالسوائل.



University of Babylon



College of nursing

تقييم معارف طلاب كلية التمريض بالحساسية المفرطة

مشروع تخرج مقدم لكلية التمريض جامعة بابل ضمن متطلبات الحصول على درجة البكالوريوس في التمريض

2022/2023

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