

Awareness Of Female Students Of The College Of Education, University Of Najran, About Nutrients That Improve Immunity (To Combat The Emerging Corona Pandemic As A Model)

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Abstract

The research aimed to reveal the reality of awareness of the female students of the College of Education, Najran University, about nutrients that improve immunity (to resist the emerging corona pandemic as a model), and the use of the qualitative approach in analyzing the data collected by conducting semi-standardized in-depth interviews with 30 students from the College of Education at Najran University who were randomly selected, and the results: The majority of participants have good knowledge of factors that improve immunity in general and that weaken it, as well as foods that weaken immunity, while it became clear that the nutritional awareness of students about nutrients that improve immunity is low and they need more support and nutritional awareness. They also have low knowledge of food sources of vitamins and minerals that enhance immunity and their nutritional alternatives, as well as the importance of these elements for immunity and the damages of their deficiency on the immune system. They also need more awareness about acquired immunity and how to improve it and the components of the immune system and its preservation.

Keywords: immunity, pandemic, novel coronavirus, nutrients.

I. Introduction

The world has been deeply shocked by the widespread and rapid spread of the Covid-19 virus (the emerging corona), and it has become one of the biggest and most important challenges facing governments, which have begun their various measures to confront this new pandemic with partial or total closure, and the emerging corona virus was identified, for the first time in a number of People with pneumonia symptoms in Wuhan, Hubei Province, China, as most of the cases were related to the seafood and animal market. The 2019 novel coronavirus is a new strain of coronavirus that was first reported on December 31, 2019, after the World Health Organization classified the coronavirus as a global pandemic, a "pandemic." Many voices warned that after the outbreak of the epidemic in China and Europe, from the epidemic is expected to spread in countries that suffer from fragile health systems, humanitarian crises and conflicts [1], and the emerging corona virus causes

pneumonia, coughing, fever and shortness of breath, and in severe cases it causes organ failure, and since it is a viral pneumonia, taking antibiotics is useless, and the strength of immunity is the weapon of individuals to prevent this virus. Viruses in general look for bodies with weaker immunity, and consider them an easy target that can be attacked, so it is necessary to improve the body's resistance against virus infection. So, understanding the pattern of immune system induction in adults and children in respiratory syndromes can help find therapeutic strategies for these fatal diseases [2]. God Almighty has endowed man with a strong defensive system that possesses an eye-catching ability to distinguish the beneficial from the harmful and to confront every attempt to attack the body, whether from the outside or from the inside, which is the immune system. The unique capabilities of the immune system are manifested in identifying each visitor to the body, distinguishing between friend and foe, and producing mechanisms that resist these

harmful intruders, not only that, but it also has a long-term memory, so it can remember a stranger whom it has known for many years [3]. Our immune system can be thought of as a set of separate but highly integrated defense networks, each playing a specific role but cooperating with each other. The armament consists of a variety of different cell types and hundreds of proteins, each with a qualitatively specific function. The immune response is divided into innate and adaptive immune responses [4]. The body's immune system is considered the safety valve in protecting it from infectious microbial diseases and resisting the effects of harmful environmental factors. Therefore, any disturbance that affects this system makes a person vulnerable to an infinite number of serious diseases [5]. And our immune system, like other bodily systems, declines over time. This phenomenon is known as immune aging, so it must be preserved and worked to strengthen it and stay away from all the reasons that cause its exhaustion. Numerous scientific research indicates that there is a close relationship between the nutritional status of individuals and the efficiency of their immune system. Malnutrition is associated with latent immune deficiency even in mild forms of undernourishment. Infection with infectious diseases is more common and more severe in people with chronic diseases such as obesity [6]. The most common cause of immunodeficiency worldwide is acute malnutrition [7] Any defect in the immune system due to malnutrition or an unhealthy lifestyle may weaken it and make the body vulnerable to infections and diseases. The relationship between nutrition and the immune system is strong, negatively and positively [8]. **Therefore**, good nutrition leads to improved immunity, which is one of the measures to prevent Covid-19 disease along with other measures announced by the Ministry of Health [9] state that the performance of the immune system's function depends a lot on specific nutrients, so our body's production of natural antibiotics and complement proteins depends, and the ability of defense cells to capture, ingest and digest harmful factors depends on the presence of vitamin C, so the increased consumption of this Vitamins at the time of infection (rather than waiting for symptoms of illness to appear) is crucial; Taking it immediately at the time of infection increases the level of protection you enjoy, but if it is taken a day or more later, it will be much less effective as the production of complement proteins depends on the presence of calcium and magnesium, while the production of interferon depends on the metal

manganese. Nutrients enter the composition of cells, especially antibodies of a protein nature. If a person suffers from malnutrition resulting from a lack of protein, this will directly affect the composition and concentration of antibodies, and this leads to a lack of immunity in the body and thus to the inability to resist diseases [3], [10] stresses the importance of iron, zinc, selenium and copper. There are also some vitamins that play a role in improving the immune system, which are: Vitamins (B12, Folic acid, A, C, D, E, B6) [11]. Eating a sufficient amount of vitamin, A and its generators helps to strengthen the immune system in the body and protect children in particular from infection. This is due to the fact that vitamin A stimulates many functions of the body's immune system, such as the activity of white blood cells, and vitamin C enters the production of interferon, a substance that acts as an antidote. Antiviral and anti-cancer, so the needs of it increase during illness and infection. The coenzyme of thiamine also helps in the formation of ribose sugar, which is included in the formation of nucleic acids, RNA, DNA, and also helps in the formation of ribose sugar [10] stresses the importance of iron, zinc, selenium and copper. There are also some vitamins that play a role in improving the immune system, which are: Vitamins (B12, Folic acid, A, C, D, E, B6) [11] Eating a sufficient amount of vitamin A and its generators helps to strengthen the immune system in the body and protect children in particular from infection, and this is due to the fact that vitamin A stimulates many functions of the immune system in the body, such as the activity of white blood cells, and vitamin C enters the production of interferon, a substance that acts as an antidote It is antiviral and anti-cancer, and therefore the needs of it increase during illness and infection. The coenzyme of thiamine also helps in the formation of ribose sugar, which is included in the formation of nucleic acids, RNA, DNA, and the coenzymes of vitamin B6 help in the production of antibodies in the body [12] (Abdul-Kader et al., 2015) and fatty acids. Of the omega-3 or omega-6 type, a lack of protein and energy nutrition also reduces immune function and increases susceptibility to infection [13] so a healthy diet boosts the immune system. This requires everyone to know the nutrients; In terms of the types, components, quantities required, the benefits of each type and its necessity for health, the consequences of its increase or deficiency, where it is located, the optimal way to benefit from it, its interactions and interactions with the rest of the other nutrients, and knowledge of food alternatives,

so that an appropriate diet can be planned [14]. The ability to provide food is not enough, but the most important thing is awareness of the appropriate quantities and qualities in order for the individual to grow in physical and mental health. Therefore, the need to develop nutritional awareness at the present time has become an urgent necessity, due to the presence of many wrong eating behaviors and habits among students in schools, which have become clear and visible to every person [15], in addition to the conflicting information and nutritional knowledge provided by the print, audio and visual media [16]. Nutritional awareness is a necessary matter that all institutions, especially those related to male and female students, should pay attention to. The effect of food on them is in their bodies and in their minds, and since a healthy mind resides in a healthy body, we must take care of their nutrition until their bodies become healthy and therefore their minds are healthy or their ability to achieve academic achievement, remember and pay attention. Larger. Spreading nutritional awareness is necessary for university students, especially female teachers, as they are mothers and future teachers, so their information and nutritional practice must be sound and they have knowledge of nutrients that raise immunity to protect the body from diseases. Therefore, the current research was concerned with revealing the awareness of female students about nutrients that improve immunity, especially during the emerging Corona pandemic.

2. Research problem

Although there is a drug that has been discovered for the emerging corona virus, preventive measures must be taken to help raise our immunity during circumstances such as the present. Food plays a major role in the health and immunity report [17]. People who follow a balanced diet have better health and a stronger immune system [18]. Studies have revealed a causal relationship between the availability of certain nutrients and the immune defenses of vitamins A, B6, B12, C, D and folic acid (vitamin B9) and for trace elements such as zinc, iron, selenium and copper [19], in addition to eating two to three cups of water on an empty stomach, as well as drinking additional amounts of water throughout the day, so a lot of Drinking water works to moisturize the mucous membranes lining the respiratory system, which helps to produce antibodies and white blood cells, and then strengthen the performance of the immune system [20]. Therefore, work must be done to raise people's immunity by providing the necessary information about nutrients that improve immunity. Especially for university students to

enable them to provide information to their families and future generations. Every effort or expenditure spent on the nutritional level undoubtedly achieves a great return by raising the health level, reducing treatment costs, increasing the benefit from education and increasing production, and thus raising the economic and social level of the state [21]. Therefore, all members of society, especially university students, as they are future mothers and teachers, must have knowledge and awareness of the importance of nutrients and their sources to obtain proper and balanced nutrition and raise the body's immunity to resist diseases, especially respiratory diseases such as Covid 19. The male and female students. The results of the study [22] showed a low level of nutritional awareness among students of the Faculty of Physical Education, An-Najah University. And the study [23] found a decrease in nutritional awareness and nutritional culture among students of the Faculty of Physical Education. While the study of [24] resulted in a severe deficiency of vitamin A, calcium and hemoglobin level in the blood in most of the study sample. The study of [25] confirmed that the incidence of anemia among males was 21.8% and females was 33%. It is clear from this that there is an urgent need to reveal the reality of the students' awareness of nutrients that improve immunity, especially during the emerging corona pandemic and similar types, as good nutrition contributes to improving immunity, which is one of the most important preventive measures against viruses and any foreign object that attacks the body and to benefit from that in creating awareness programs for them.

The problem of the current research can be formulated in the following main question:

What is the reality of students' awareness of nutrients that improve immunity to resist viruses, "the emerging corona pandemic as a model?"

The following sub-questions are derived from it:

- What is immunity?
- Are there types of immunity?
- What are the components of the immune system?
- What are the factors that improve the immune system?
- What are the factors that weaken the immune system?
- What vitamins improve the immune system?
- What are the food sources of vitamins that improve the immune system?

- What is the role of vitamin A, B, C, D, and E to improve the immune system?
- What are the effects of vitamin A, B, C, D, and E deficiency on the immune system?
- What are the minerals that improve the immune system?
- What are the food sources of mineral salts that improve the immune system?
- What is the role of (calcium - magnesium - iron - selenium - zinc - copper) to improve immunity?
- What are the effects of deficiency of (calcium - magnesium - iron - selenium - zinc - copper -) on the immune system?
- What foods weaken the immune system?

3. Research aims

The current research mainly aims to:

Revealing the reality of female students' awareness of the immune-enhancing nutrients "to combat the emerging corona pandemic as a model".

4. Research limits

The current research was limited to the following limits:

- 1- Objective limits: Awareness of students about nutrients that improve immunity to resist the "emerging corona pandemic" as a model.
- 2- Human limits: female students of the College of Education at Najran University.
- 3- Time limits: the first semester of 1443 AH.
- 4-Spatial boundaries: the college complex at Najran University.

Importance of the studying

The importance of the current study lies in:

- This study comes in response to what conferences and scientific research have called for about the necessity of developing nutritional awareness in all sectors of society - especially university students - and then the current research attempts to reveal the reality of female students' awareness of nutrients that improve immunity to resist the "emerging corona pandemic as a model". It deals with an important age stage in human life, especially females, which is the late adolescence stage in the age stage (18-21) years, as well as a study stage that is one of the most important stages of study, which is the university stage, where the individual prepares to work and bear the responsibilities and burdens of life, and the girl prepares for it. To work, to bear the burdens of marriage and to take care of children, for this reason the current research was limited to female students, mothers and teachers of tomorrow, and

who are responsible for raising the next generation, and in a vital and important topic, which is awareness of nutrients that improve immunity. Psychological pressures on them and those around them and those in charge of their care.

- Knowing the awareness of nutrients that improve immunity for university students helps in designing nutritional programs to improve their health status.

The results of the current research can help those in charge of caring for university students and adolescent girls in late adolescence in general to provide information that develops them awareness of nutrients that improve immunity, which increases their immunity as indicated by the results of previous studies.

5. Research terms

Nutritional awareness

It is the individual's knowledge of nutrients and the importance of each element and how to benefit from and preserve it during cooking, as well as nutritional recommendations and the best ways to plan and prepare meals to obtain healthy, integrated and balanced food in nutrients [26] as it can be defined as a mental state resulting from The process of realizing how to choose the important nutrients for the body that meet the needs of the whole body [27], which is knowledge and understanding of nutritional information and the ability to apply this information in daily life on a permanent basis. It preserves human health and prevents diseases within the limits of its economic capabilities [28]. What is meant in this research is the extent to which the students are familiar with the knowledge and information about vitamins and mineral salts that improve immunity and their food sources and the role of each of them in improving immunity as well as the damages of their deficiency on the immune system.

Immunity

It is the ability of the living body to prevent infection with diseases or to identify any foreign body that enters it [29]. It is also known as the ability of the organism to resist the invasion of harmful microorganisms and foreign substances [30]. It is procedurally defined in the research as: the human ability to resist diseases and microorganisms in general and the emerging corona virus in particular.

The pandemic

The pandemic is considered the highest degree of disease spread according to the geographical nature, so that almost no area is devoid of direct influence, and supervision by international organizations, especially the World Health Organization, to follow up preventive measures and determine global health policies, given that the organization has the upper hand in drawing the features of dealing with the pandemic [31].

It is intended in this research the spread of the emerging corona virus.

Nutrients

They are the components of foods that provide the body with the necessary elements needed for it, and they include carbohydrates, proteins, vitamins, mineral salts, and water [12] It is intended in this research vitamins (A - B - C - D - E) and mineral salts (calcium - magnesium - iron - selenium - zinc - copper) that have a role in immunity.

- novel coronavirus

It is defined by the World Health Organization as an outbreak of the disease caused by the emerging coronavirus under SARS-2 viruses, which was first discovered by the organization on December 31, 2019 after a group of viral pneumonia cases were reported in Wuhan, People's Republic of China, represented by a new strain of coronavirus that had not been detected. Humans have previously been infected with it, and its symptoms range from respiratory symptoms, fever, cough, shortness of breath and difficulty breathing to the most severe cases, which may be caused by pneumonia, acute respiratory syndrome and kidney failure, and all of it may lead to death.

6. Theoretical framework

Immunity is the strength that the body acquires to resist and overcome microbes, i.e., the human body's defenses against the invasion of germs that cause disease. It can be defined as the body's ability to resist microorganisms and some compounds foreign to the body, which can harm and harm it. It can also be defined more comprehensively as the various ways in which the body responds to foreign compounds and elements, and sometimes the components of the body itself, which are in direct contact with tissues, in an attempt by the body to get rid of these compounds and elements and to nullify their harmful effect [3] A healthy body is equipped with all the defense systems that protect it from the evil of all external and internal factors harmful to it [29-32] state that immunity is either natural or acquired:

A: Natural immunity: It includes two types of protection lines, which are the natural barriers and barriers in the body. A: External protection lines, which are the external natural barriers that have been prepared to prevent the entry of microbes and foreign bodies into the body, the most important of which are: the skin, mucous membranes, cilia of the trachea and earwax.

B: Internal lines of protection: They are the internal barriers that work to kill and prevent microbes from reaching cells and tissues. These include macrophages, granulocytes, and white blood cells. They are 3 types of basal cells, eosinophils, and neutrophils. Lymphocytes are two types of T lymphocytes: - their source is the thymus gland located inside the chest. B lymphocytes: They come from the bone marrow.

[33] reported that among the natural immunity are chemical factors

1- pH: Various types of chemical barriers have been found along the digestive system, which have a significant impact on the body's resistance to diseases, including saliva, gastric juice, and sweat secretions.

2-Status enzymes: a protein with a low molecular weight. They are made in the parotid gland, the membranes of the respiratory and digestive systems, the spleen, lymph nodes, and white mononuclear cells. They are found in blood, saliva, and most body fluids with the exception of spinal cord fluid, urine and sweat.

3- basal polypeptides 4- interferon 5- epoetin digesters

b- acquired immunity

It is the immunity that the body acquires after being exposed to a specific infection, and it is of two types

-Natural acquired immunity, which is divided into: temporary natural acquired immunity from antibodies that pass from the mother to the fetus and lasts for six months, and permanent natural acquired immunity as a result of exposure to infection and recovery from diseases such as measles.

-Artificial acquired immunity, which is of two types: temporary artificial immunity that is given in the form of ready-made antibodies and the effect lasts for a specific period, such as serums and antibodies to diphtheria and tetanus, and permanent artificial immunity that occurs after vaccination with vaccines, where the body creates it and lasts for a long time, such as vaccination with measles.

It has been found that there are significant differences between individuals in many immune functions even among healthy people and it is likely that genetic factors such as age, gender,

smoking habits, exercise levels, diet, history of infection and vaccinations are all important factors in this noticeable difference [34]

mentions that the immune system consists of [3]:

A - Organs: including central organs, which are the bone marrow and thymus gland, and external or surrounding organs, which are the lymph nodes, spleen, and Baber's plaques.

b- Soluble substances: antigens, complements, and lymphokines

c- Cells: cells (macro phagocytic, lymphoid white, moderate white, acid white, basic white.)

The immune system acts as a line of defense through its role in fighting disease, helping wounds heal quickly, and fighting infection. It also helps in healing and recovering from any organic disease that affects humans.

The effect of nutrients on the immune system:

Nutrition is a critical determinant of immune responses and malnutrition is the most common

cause of immunodeficiency worldwide [35]. If the disease is accompanied by malnutrition, the immune system becomes forced to work without sufficient support from the necessary nutrients, which in turn leads to weakening the immune system and increases the danger of the disease and the inability to resist it [36]. Whereas, people who follow a balanced diet have better health, a stronger immune system, and are less likely to develop chronic and infectious diseases [18]. Perhaps one of the most important elements that maintain our immune system is a healthy, balanced diet that contains all nutrients from proteins, carbohydrates, fats, vitamins, minerals and water in balanced proportions, with a healthy lifestyle and healthy eating habits. Studies indicate that the reinforcement with nutrients may strengthen and activate the immune system, and among these elements are some vitamins and mineral salts, as mentioned by [35-37]

Table (1) shows the importance of some nutrients to the immune system and the damages of deficiency and food sources

nutritional element	Importance	Shortage	food sources
Vitamin A	Antiviral and necessary for the production of growth hormone responsible for maintaining the activity of the thymus gland, and thus the strength and effectiveness of the immune system	The thymus gland then shrinks and becomes less active and less efficient in maturation of T cells, and B cells are greatly affected.	Beef liver - carrots - cabbage - pumpkin - sweet potatoes - melon - pumpkin - tomatoes - apricots - peach - watermelon
Vitamin B complex	This family of nutrients is necessary for every cell in the body, including the cells of the immune system. B6 helps the body make cysteine from methionine, which is an amino acid important to the immune system. B5 is also an immunostimulant necessary for the production of antibodies and helps phagocytic cells and natural killer cells to function.	Decreased proliferation of white cells T, B. Decreased cellular immune function and antibody formation. Decreased phagocytic activity	The main sources of all B vitamins are Liver, yeast, molasses and whole grains, especially wheat germ and rice bran.
Vitamin c	It has a strong antiviral effect, activating the production of prostaglandins in the blood	Impairment in the performance of macrophages in their cleaning	Pepper - Guava - Citrus - Cabbage - Broccoli -

	platelets which leads to an increase in the production of T cells. Necessary for a certain type of cell division that leads to a rapid increase in both T and B cells, Aiding in the production of interferon, it improves the production of complement C3, which in turn stimulates B cells to produce more antibodies, especially IgM, IgG, IgA. Mononuclear macrophages use vitamin C with hydrogen peroxide and zinc to kill bacteria, natural antibacterial agents.	function - decreased production of T cells	Strawberry - Kiwi - Papaya - Pea - Tomato - Mango
Vitamin c	Necessary for bone integrity and then for normal movement, and the immune system suffers indirectly if the bones are not healthy. Because muscle contraction is what pushes lymph throughout the body.	It leads to poor lymphocyte proliferation and general resistance	Herring - mackerel - salmon - anchovies - whole milk - eggs - oysters
Vitamin e	Essential for a normal immune response - neutralizing free radicals - effective in protecting us from air pollution	It leads to a weakened immune response	Sunflower seed - peanuts - sesame seeds - beans - wheat germ - tuna - sardines - nuts
Calcium	- vital for the immune system, it is necessary for all macrophages - T cells - necessary to eliminate viruses and to cause a slight fever that activates the role of macrophages Weakness in the role of macrophages	T cells need calcium to make killer enzymes.	It is essential that calcium and magnesium are in balance, as there are food sources rich in both, as in nuts and vegetables such as carrots, radishes and sweet potatoes.
Magnesium	Vital for antibody production and for the thymus gland	An increase in histamine levels and an increase in allergic reactions	
Iron	- Necessary for the production of antibodies, white blood cells and enzymes made by macrophages and granulocytes neutrophils Detoxification of some drugs and bacteria	Decreased cellular and adaptive immunity, as well as decreased T-lymphocyte concentration, natural killer (NK) cell activity	Liver - red meat - whole grains - beans - nuts and green vegetables

		and production of interleukin-1 and interleukin-2. Increasing the infection rate	
selenium	Helps in the production of antibodies. Without it, white blood cells do not recognize invaders.	Lower selenium concentrations in humans have been associated with decreased natural killer cell activity and increased fungal disease. T-cell function is suppressed, and Igm and igG deficiency occur	Meat - seafood - eggs
Zinc	- Necessary for the normal release of vitamin A from the liver and increases the activity of the thymus gland Production of enzymes required to get rid of cancer cells that are normally produced The production of the hormone thymolin, which is necessary for the production of T cells	Lymphatic atrophy, poor response to T cells and neutrophils, and decreased thymocyte activity and phagocyte production.	Meat and offal meat such as liver and spleen - Umm al-Kholul - eggs - green leafy vegetables
Copper	- has antimicrobial properties Boosts T-lymphocyte responses Copper supports the function of neutrophils, monocytes, and macrophages, and the activity of natural killer cells	Decreased white blood cells and neutrophils, decreased production of macrophage, T cells, decreased antibody response and decreased function of the thymus gland, thus increasing the infection by reducing cellular immunity	Shellfish - shellfish - liver - legumes - whole grains - leafy vegetables

There are also some things that must be followed in order to enjoy a strong immunity from it [8]. Eating a varied, balanced diet that contains all the nutrients that the human body needs from the elements for energy production (carbohydrates, proteins and fats), vitamins and minerals with good chewing. And maintain the amount of protein an individual needs to produce and replace tissues,

from easily digestible proteins, fat-free yoghurt, fish, chicken, and lean meats. And eat vegetables cooked in steam or in soup, because this helps to break down substances that are difficult to digest or cause digestive disorders. Reducing the intake of simple sugars and replacing them with complex carbohydrates, because they suppress the work of the immune system. Limit fats, saturated and

polyunsaturated oils, and meals high in fat because they make digestion less efficient. And poor efficiency of certain aspects of the immune work, and the use of monounsaturated fats such as olive oil, fish oil, because they help to strengthen the immune function. Excessive intake of fiber-rich foods such as cereals with their cover, legumes and leafy vegetables to benefit from their protective effects against many diseases. And eat bread prepared from whole wheat grains (brown bread) over white bread because of its high content of dietary fiber, vitamins and minerals necessary for the body. And make the vegetable and fruit salad on the daily menu, and increase the number of times you eat a small amount to improve the absorption of nutrients from food. Ensure the cleanliness of food, especially fruits and vegetables. Eat many different foods so that the individual does not develop an allergy to a particular food by repeating it for long periods. Avoid items that contain caffeine.

7. Previous studies

- Study [38] which mainly aimed at preparing, implementing and studying the impact of a counseling program aimed at improving awareness of the immune system and ways to strengthen immunity nutritionally. The most important results were that the majority of the respondents had a medium and weak level of awareness, respectively. While 19% had a good level of awareness. While 67.2% and 13.8% of the respondents had moderate and weak practices, respectively, while 19% had good practices related to eating foods that strengthen the body's immunity and be careful in eating foods that weaken immunity. And there are significant differences between the average scores of the sample members in awareness of the importance of the immune system in favor of females and those who have children in the family and workers, and there is a positive direct correlation between awareness of the importance of the immune system of the body and awareness of foods affecting it and the extent of their intake. And there are statistically significant differences between the pre and post application and the high percentage of learning gained from the program with regard to awareness of the importance of the immune system and the foods affecting it and awareness of eating these foods, respectively study [39] aimed at knowing the level of health awareness about epidemic diseases in light of the new epidemic of the Corona virus, Covid-19, among students of the basic education stage (primary - preparatory) in some Egyptian governorates, and the research also aimed to

identify the level of health awareness they have for each After one of the three dimensions of health awareness (cognitive - emotional - behavioral) as well as for each of the four health awareness axes (personal health - healthy nutrition - prevention of epidemic diseases - prevention of the emerging epidemic of the Corona virus, Covid 19), the research also aimed to know the impact of the variables (stage Educational - type of education - gender - student governorate). The results concluded that the general level of health awareness as a whole, and of its three dimensions and four axes identified in the research, is more than the required sufficiency limit (75%). And there were statistically significant differences at the level (0.01) in the educational stage variable in favor of preparatory stage students. And there were statistically significant differences at the level (0.01) in the variable type of education in favor of public education students. And there were statistically significant differences at the level (0.01) in the student governorate variable in favor of Beheira students, then Alexandria, then Sohag and the last of Cairo, and there were no statistically significant differences in the gender variable in the research sample study [40] aimed to verify the effect of four main elements of healthy lifestyles: (healthy eating, sleep quality, physical activity and body mass index) on the level of psychological anxiety among students of Hafr Al-Batin University during the spread of Covid 19. The results indicated that there was a difference in the statistical function between male and female students, as female students were more anxious than male students during the spread of the Covid-19 pandemic. High Severity - They are less likely to be anxious during the COVID-19 pandemic study [41] This study was conducted to evaluate the protective effect of turmeric and rosemary powders on kidney function and immune system against hyperuricemia in mice. The results concluded that the use of turmeric and rosemary led to an improvement in kidney function. The best results were recorded by groups that took high doses (2%) of both turmeric and rosemary. Turmeric and rosemary can be used to improve kidney and immune system function and protect against hyperuricemia in mice, while the study [42] aimed to identify the impact of a program to develop nutritional awareness of knowledge among students of the Faculty of Specific Education, Minia University, and the research found: There is a statistically significant difference between the average scores of the students in the study group in the cognitive nutritional awareness scale before their exposure The program and its after in favor of

the post application, and this indicates the effectiveness of the program that was applied to the students of the study group, who are students of the Faculty of Specific Education, Minia University study [43] aimed to identify the effect of glutamine on the immune globins of athletes. The researcher used the experimental method on a sample of ten soccer players. The experimental design was used by designing two groups, one of which is control and the other is experimental, and the most important results were that the use of glutamine During the training program in the pre-match period, it had a positive effect on increasing the concentration of immunoglobulins (IgM-IgA-IgG), and the most important recommendations were to apply the use of glutamine during the different training season periods, while the study of [44] aimed to prepare an indicative program to develop nutritional and health awareness among the members of the research sample, applying the prepared program and measuring its effectiveness in terms of developing the knowledge of the researched students in some aspects, and the most important results were the presence of significant differences between the average numerical values before And after applying the counseling program sessions on the cognitive level of the research sample students regarding nutrition and nutrients, balanced nutrition, malnutrition diseases, anti-nutrition, food additives, drinks and health in favor of the post application. Study [45] This research aimed to identify the extent, effectiveness of a proposed program for developing nutritional awareness among university students. The study resulted in important results, including: - The effectiveness of the proposed program in developing nutritional awareness among the students of the experimental group and this was shown through the average of the difference Between the mean scores of both the experimental and control group in the nutritional awareness scale, as well as through the difference between the averages of the intake of nutrients as proven by analyzing a 4-hour retrieval form for the experimental group before and after.

7. Research Methodology

Research Methodology: Using the qualitative approach, the basic explanatory studies approach that focuses on how research participants perceive and understand the events, processes, and activities that they encounter in relation to the research problem under study.

Participation: Participation in the research was selected using a random sample strategy, consisting of 30 female students from the College of Education at Najran University.

Research tool: Semi-structured in-depth interviews were used as a data collection tool. The in-depth interview takes the individual as a starting point for the research process, and it is a special kind of dialogue between the researcher and the interviewee.

Interview Tools: An interview guide has been prepared, which is a set of questions that seek answers to achieve the goal of the research. With a pen and paper to record notes, gestures and handwritten body language during the interview. Interviews were conducted and data were collected during the month of October and November 2021 AD, after conducting the initial test of the interview guide and ensuring the clarity of the questions. All observations and interviews were monitored and the most frequent were taken. After collecting the data from the participants, it was organized according to the similarities immediately after each session, and then analyzed after reading several times, categorizing and coding the similar coding according to the topics discussed during the interviews, then identifying the main ideas for each topic and identifying the most important points.

9. Results and discussion

The following is a presentation of the results that were reached through the collection, tabulation, analysis, classification and coding of the in-depth interview data collected by asking closed-ended questions to the participants in the research, to clarify their awareness of the immune-enhancing nutrients:

- The answer to the first question, which states: What is immunity?

The discussion of the participants in the research began by introducing them to the definition of immunity, and each participant was given an opportunity to review her answer. It was found that (25) participants mentioned that immunity is the protection of the body from viral and bacterial diseases. She also answered (3) protection from foreign bodies and cancer cells. She mentioned (2) that it is a line of defense against infectious organisms. It is clear that the participants define immunity as protecting the body from viruses, bacteria, foreign bodies, cancer cells and any infectious microorganisms.

- The answer to the second question, which states: Are there types of immunity?

The majority of participants stated that immunity is natural with which a person is born, while the minority stated that immunity is of two types, natural and acquired.

- Answer the third question: What are the components of the immune system?

(10) of the participants explained that the components of the immune system are lymphocytes, while (12) the skin answered, while (8) they do not know. This indicates that the majority of participants do not know about the components of the immune system, either lymphocytes or the skin. That is, they need to know more about the components of the immune system.

- Answering the fourth question: What are the factors that improve the immune system?

The participants mentioned that there are factors that improve immunity, which are in order from their point of view, proper nutrition, avoidance of stress, exercise, sleeping enough, avoiding smoking and alcohol.

- Answer the fifth question: What are the factors that weaken the immune system?

The participants explained that there are some factors that weaken the immune system, which from their point of view are unhealthy nutrition, the child's failure to breastfeed, chronic diseases such as diabetes and stress, obesity and overweight, advanced age and lack of sleep.

- Answer the sixth question: What vitamins improve the immune system?

The vast majority of participants reported that vitamin C and vitamin B complex improved immunity, while (5) answered vitamin E and vitamin D while (3) did not know. It is clear from this that the vast majority of participants do not know of vitamins that improve immunity, except vitamin C, the B complex only.

- Answer the seventh question: What are the food sources of vitamins (A-B-C-D-E) that improve the immune system?

The majority answered that vitamin C is found in citrus fruits, vitamin D is formed when exposed to the sun, and vitamin A is found in carrots, while they do not know the food sources of vitamin B and E. It is clear from this that they know one food source for each of vitamin A, C, and D, and they do not know the food sources of vitamin B and E, which indicates that they need more knowledge and information about food alternatives for these vitamins.

- Answering the eighth question: What role does vitamin A, B, C, D, and E play in improving the immune system?

It turned out that the participants did not know the function or role of each of the vitamins A, B, C, D, and E to improve the immune system, except that they are important for the immune system.

- Answer the ninth question: What are the effects of vitamin A, B, C, D and E deficiency on the immune system?

The participants mentioned that it causes a weakening of the immune system in general, and the harms of each vitamin were not known.

- Answer the tenth question: What are the mineral salts that improve the immune system?

(15) of the participants stated that zinc and calcium are mineral salts that improve immunity, while (10) answered iron, while (5) did not know. It is clear from this that half of the participants knew of the immune-enhancing mineral salts zinc and calcium only, and a third of them knew iron only, which indicates that they have a severe lack of awareness of the immune-enhancing mineral salts.

- Answer the eleventh question: What are the dietary sources of mineral salts with calcium, magnesium, iron, selenium, zinc, and copper that improve the immune system?

The majority of participants stated that zinc is found in green vegetables, calcium is found in dairy and dairy products, iron is found in liver and meat, magnesium is found in potatoes, iodine is in seafood, while no source of copper and selenium is mentioned. It is clear from this that the participants know a food source. One for zinc, calcium, magnesium and two sources of iron, indicating that they are not familiar with food alternatives.

- Answer the twelfth question: What is the role of calcium - magnesium - iron - selenium - zinc - copper to improve immunity?

It turned out that the participants did not know the function or role of mineral salts (calcium - magnesium - iron - selenium - zinc - copper) to strengthen the immune system, except that they are important for the immune system.

- Answer the thirteenth question: What are the effects of deficiency of (calcium - magnesium - iron - selenium - zinc - copper) on the immune system?

The participants mentioned that it causes a weakening of the immune system in general, and the harms of deficiency of each element were not known.

- Question fourteen: What foods weaken the immune system?

The participants agreed that the foods that weaken immunity are in order from their point of view fast food - fried food - salty food-sugar

10. Conclusion

It is clear from the above that the nutritional awareness of the students about nutrients that improve immunity is low and they need more support and nutritional awareness. This result is consistent with the study of [38], where the awareness of the majority of the respondents was between average and weak. It also became clear that the students have weak knowledge of the sources. The nutritional value of vitamins and minerals that improve immunity as well as nutritional alternatives, as well as the importance of these elements for immunity and the damage of their deficiency on the immune system. They also need more awareness about acquired immunity, how to improve it, the components of the immune system and its preservation, and the factors that improve immunity.

Recommendations

In light of the results of the study, the researcher recommends the following:

- Inclusion of food culture as a course within the general preparation courses as a university requirement.
 - Conducting courses and scientific publications on nutrients that improve immunity.
 - Making advertisements on the university's website about the immune system and how to raise its efficiency.
 - Extensively spreading nutritional awareness among university students.
- Strengthening social media with correct nutritional information to improve immunity.
- Conducting more research on nutrients that improve immunity with other groups of society.

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