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Investigation of Food that Boost Immunity and Fight Infections in Humans Body in Akwa Ibom State

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Abstract: The study investigated "food that boost immunity and fight infections in human's body". In carrying out the research descriptive survey design was adopted for the study. The study was carried out in Akwa Ibom State. The targeted population for the study comprised all medical personnels and microbiologists in Akwa Ibom State. A stratified random sampling technique was used to select 30 medical personnel, 10 from each of the three senatorial districts in Akwa Ibom and 15 microbiologists, 5 from each senatorial districts in the State, which gave a total of 135 respondents used for the study. The instrument used for data collection was a structured questionnaire titled "Immunity and Food Wellness Questionnaire (IFWQ)". Face and content validation of the instrument was carried out by an expert in test, measurement, and evaluation in order to ensure that the instrument has the accuracy, appropriateness, and completeness for the study under consideration. The reliability coefficient obtained was 0.88, which was high enough to justify the use of the instrument. The data generated for this study was subjected to appropriate statistical technique such percentage analysis to answer research questions. The findings of the research revealed that Water-Hydration and Immunity" is essentially and majorly consumed by the residents in Akwa Ibom State among other for substances and this help them in boosting immunity and fighting infections in their bodies. The findings similarly also revealed that residents in Akwa Ibom consume food that boost immunity and fight infections in their bodies at very high extent. Finally, Akwa Ibom State residents consume water more than any other type of food that to boost immunity and fight infections. Also the people consume food that boost immunity and fight infections in their bodies to very high extent. The study concluded that humans have the potential to reduce the burden of infectious diseases and promote health and well-being across populations. However, one of the recommendations was that researchers should advance their understanding of the complex relationship between food and immunity and to contributing to the development of evidence-based dietary interventions that enhance infection resistance and promote overall health and well-being.

Keywords: Food, Immunity, Infections, Human Body and Akwa Ibom State.

INTRODUCTION

Human bodies possesses multiple defense mechanisms against pathogenic invasion, and one such mechanism is the immune system a sophisticated network of cells, tissues, and organs that

collaborate to shield the human body from potential harm. In recent times, the importance of maintaining a robust immune system to combat infections and diseases has garnered significant attention worldwide. With the emergence of novel pathogens and the increasing prevalence of chronic illnesses, understanding the role of nutrition in boosting immunity has become paramount (Singh,2023). It is widely acknowledged that diet and nutrition have a significant impact on immune function. Regularly eating a variety of nutritious foods rich in vitamins and minerals, such as citrus fruits, spinach, red peppers, and ginger may help boost the human immune system. Feeding the body certain foods may help keep human immune system strong (Marengo, 2024). The investigation of foods that enhance immune function and fight infections in the human body has thus become a focal point of scientific research and public interest. A well-functioning immune system is essential for preventing infections and maintaining overall health. While genetics plays a significant role in immune function, lifestyle factors such as diet also exert a profound influence. Various nutrients found in foods have been identified as crucial contributors to immune health. These include vitamins such as vitamin C, vitamin D, vitamin E, and vitamin A, as well as minerals like zinc, selenium, and iron. Additionally, phytochemicals, antioxidants, and probiotics present in certain foods have been shown to modulate immune responses and enhance the body's ability to fight infections (Calder, 2021). Nonetheless, it's critical to understand that there are many moving parts and a complex interaction between immunity and nutrition. The way in which particular foods affect immune function might vary depending on an individual's age, genetics, dietary habits, and general health. Additionally, eating a varied and balanced diet is essential to maintaining general health and immunity, even though some foods may have immune-boosting qualities.

This investigation aims is to unravel the intricate relationship between dietary components and immune function, with the overarching goal of promoting wellness and disease prevention in human populations. By pursuing these objectives, researchers strive to unlock the potential of diet as a powerful tool for enhancing immune health, reducing the burden of infectious diseases, and improving overall quality of life for individuals and populations alike.

Statement of Problem

In Akwa Ibom State, the prevalence of infectious diseases and weakened immune systems remains a significant health concern. Despite the abundance of local foods and resources, there is a lack of comprehensive information on the specific foods that can boost immunity and fight infections in the human body. This knowledge gap hinders the development of effective dietary strategies to improve the overall health and well-being of the population. Therefore, there is a pressing need to conduct an investigation into the food that boosts immunity and fights infections in humans in Akwa Ibom State. This study will provide valuable insights into the nutritional properties of local foods, promote healthier dietary habits, and contribute to the development of evidence-based interventions to enhance the immune system and combat infections in the state.

Objectives

This research was set out to:

1. Find out the types of food that boost immunity and fight infections in human body consumed by the residents in Akwa Ibom State.
2. Examine the extent of frequency of consumption of food that boost immunity and fight infections in human body by the residents in Akwa Ibom State.

Research Questions

1. What are the types of food that boost immunity and fight infections in human body consumed by the people in Akwa Ibom State?
2. What is the extent of frequency of Akwa Ibom resident’s consumption of food that boost immunity and fight infections in human body?

LITERATURE REVIEW

Concept of Food

Food is very important to every living thing whether humans, animals and plants.it is a quick source of energy. Paluti (2022) defines food as an essential source of energy that is needed to keep animals, people, and plants alive. Animals and people eat food, while plants absorb a food source. Without food sources, animals, people, and plants will die, so food is needed to support life. Moreover, the food that people eat comes in many types with different tastes, textures, and nutritional content. One food may be high in fat and calories, while another food maybe more healthy, but lacks a delicious taste.

According to Vendatu (2024) food is any substance that is made up of carbohydrates, fats, minerals, vitamins and proteins and is absorbed by the living world. Food is all those essential substances which human consume for conducting and regulating the biological activities. It gives all living thing the energy to perform their day-to-day activities. Food is vital because without it, living things cannot thrive. The body is kept healthy and protected from sickness by food. It supports the genesis, growth, procreation, functioning, and regulation of biological processes. Food is essential for our physical and emotional well-being as well as the growth and development of our muscles. Food is a basic necessity of life, providing energy and nutrients to maintain the human body's physiological and metabolic functions. The definition of food is broad, as it encompasses all substances that humans, plants, and animals can consume. Food can be defined as any material that provides nourishment for the growth and maintenance of life, including repairing tissues, producing hormones, and regulating body temperature. Food can be classified into several categories based on its composition: carbohydrates, proteins, fats, vitamins, minerals, and water. These food components are essential for maintaining health, as they play critical roles in the human body (Java point, 2021).

Food is any substance consumed by an organism for nutritional support. Food is usually of plant, animal, or fungal origin and contains essential nutrients such as carbohydrates, fats, proteins, vitamins, or minerals. The substance is ingested by an organism and assimilated by the organism's cells to provide energy, maintain life, or stimulate growth. t can be raw, processed, or formulated and is consumed orally by animals for growth, health, or pleasure. Food is mainly composed of water, lipids, proteins, and carbohydrates (Wikipedia,2024).

Food is any nutrient-rich material consumed or absorbed by humans, animals, or plants in order to sustain life and growth. The major sources of food are animals and plants. It is consumed because it provides energy and nourishment and keeps humans and animals healthy. Food is one of the basic necessities of life. Food contains nutrients substances essential for the growth, repair, and maintenance of body tissues and for the regulation of vital processes (Byjus, 2023).

Concept of Infections

The term Infections are caused by infectious agents (pathogens) they can multiply quickly. Davis (2024) described infection as the invasion and multiplication of microorganisms such as bacteria, viruses, and parasites that are not normally present within the body. An infection may cause no

symptoms and be subclinical, or it may cause symptoms and be clinically apparent. An infection may remain localized, or it may spread through the blood or lymphatic vessels to become systemic (body wide). Microorganisms that live naturally in the body are not considered infections. Felman (2023) mentioned that an infection occurs when a microorganism such as bacteria, fungi, or a virus enters a person's body and causes harm. The effects of infections occur due to the immune system's attempt to get rid of the invading organism. The microorganism uses that person's body to sustain itself, reproduce, and colonize. These infectious microscopic organisms are known as pathogens, and they can multiply quickly. They can spread in several different ways including: skin contact, the transfer of bodily fluids, contact with feces and ingesting contaminated food or water. Vorvick (2019) stated that infection is defined as the invasion and multiplication of microorganisms in body tissues, which may be clinically unapparent or result in local cellular injury. It can be the state produced by the establishment of one or more pathogenic agents (such as a bacteria, protozoans, or viruses) in or on the body of a suitable host. Infection occurs when nonspecific innate immunity and specific adaptive immunity defenses are inadequate to protect an individual against the invasion of a pathogen. Infections are always caused by some external agent that invades another organism, causing biological changes that result in illness symptoms.

Kamiya (2023) defined infection as the process when harmful agents, called pathogens, invade another organism and cause systemic or localized illness. Infections are always transmissible entities, sometimes within the same species (intraspecies) and sometimes between different species (interspecies). However, not all infections are from interspecies or intraspecies contact; sometimes infections come from some environmental exposure, such as water, soil, or food. An infection that persists may be considered a disease depending on what the infectious agent is and its pathophysiology. A small cut on the finger that becomes infected and heals in a week is an infection but not a disease. An infection is defined as the successful transmission of pathogenic microorganisms, such as bacteria, viruses, parasites or fungi that are spread directly: From person to person, through respiratory droplets (for example, coughing or sneezing) or through body fluids. In humans, infections occur when an infectious microorganism enters the body, multiplies, and leads to a reaction in the body and potential infectious disease. The spread of infectious disease requires three variables, known as the epidemiological triad which are: the agent, the host and the environment (Physiopedia, 2024).

Concept of Immunity

Immunity refers to the body's ability to prevent the invasion of pathogens. Pathogens are foreign disease-causing substances, such as bacteria and viruses, and people are exposed to them every day. Antigens are attached to the surface of pathogens and stimulate an immune response in the body. An immune response is the body's defense system to fight against antigens and protect the body. Carignan (2023) defines immunity as the ability of human's bodies to protect against invading pathogens such as bacteria or viruses. This can occur naturally through exposure or through vaccination. After an immune response has been activated the body is able to fight off future infections. Microscopic invaders surround and outnumber a person, and the immune system is responsible for making sure to keep out the dangerous variety or eradicate those that manage to enter the bodies. The first line of defense in the body includes the skin. The openings in the skin are further guarded by mucous, saliva, tears, and acidic environments. Immunity is the body's ability to resist and fight infection and disease. This is done by the immune system. The immune system is made of several special components that work together to protect the body from potentially harmful foreign substances that a person may encounter in his or her environment. The immunity is supported by your immune system, which is a complex system of cells, specialized proteins and tissues which protect you from potentially harmful invaders like bacteria and other microbes. People health relies on their immunity and their immune system. It is crucial for keeping a person from getting sick by keeping potential infections under control (Berocca, 2021).

Tiwari (2022) mentioned that immunity is the ability of the body to defend itself against disease-causing organisms. It's a way of protecting the body against an infectious disease. Everyday the body comes in contact with several pathogens, but only a few results into diseases. The reason is, the body has the ability to release antibodies against these pathogens and protects the body against diseases. This defense mechanism is called immunity. The immune system is our body's best defensive system. It functions against infringing microorganisms and keeps us healthy. As immune system recognizes an antigen, it attacks it. Immunity is a defense mechanism of the body that is provided by the immune system and helps in fighting disease-causing organisms. Vaccination also enhances immunity by exposing the immune system to harmless antigens, preparing it to give a quicker and stronger response upon encountering the disease-causing pathogen. Immunity allows the body to recognize and eliminate pathogens, preventing their harmful effects and promoting overall health (Geeks for Geeks, 2024).

Immunity is your body's ability to protect your body from bacteria, viruses, fungi and toxins. Immunity is the body's defense system that protects against infections and diseases by recognizing and fighting against harmful pathogens and it is achieved through the immune system's ability to recognize and eliminate harmful pathogens (Redoxon, 2020).

Types of Food That Boost Immunity in Human Body

Boosting immunity through diet is a cornerstone of maintaining good health. The foods we consume play a vital role in strengthening our immune system, helping our bodies defend against illnesses and infections. Incorporating a variety of these immune-boosting foods into your diet can help strengthen your body's defenses and support overall health. It's important to maintain a balanced diet rich in nutrients to ensure optimal immune function and reduce the risk of illness. Eating a balanced diet, getting enough sleep and exercising daily are important for your overall health and wellness (UC Health,2020). Here's a breakdown of various types of foods that are known to boost immunity:

1. **Vitamin C -Citrus Fruits:** Citrus fruits like oranges, lemons, grapefruits, and limes are rich in vitamin C, a powerful antioxidant that helps enhance the production of white blood cells, which are key to fighting infections.

2. **Garlic – T-Cell Booster:** Garlic contains compounds like allicin, hat help the immune system fight germs in a variety of ways by stimulating cells important to fighting disease and helping to regulate the immune system. It helps boost the production of virus-fighting T-cells and can reduce the amount of stress hormones your body produces which can help keep your immune system functioning at full strength.

3. **Yogurt:** Yogurt is a probiotic-rich food that contains beneficial bacteria known as probiotics. These probiotics help maintain a healthy balance of gut bacteria, which is crucial for a strong immune system.

4. **Beta-Carotene – Leafy Greens:** Beta-carotene converts into vitamin A, which is an anti-inflammatory vitamin that can help your antibodies respond to toxins, such as a virus. Leafy greens like spinach, kale, and Swiss chard are rich in vitamins A, C, and E, as well as antioxidants and fiber, all of which contribute to a healthy immune system.

5. **Turmeric:** Turmeric contains curcumin, a compound with potent anti-inflammatory and antioxidant properties that may help enhance immune function and improve overall health. Turmeric may help fight infections and some cancers, reduce inflammation, and treat digestive problems.

6. **Mushrooms**: Mushrooms are a rich, low-calorie source of fiber, protein, and antioxidants. They may also help to lessen the risk of developing serious health conditions, such as Alzheimer's, heart disease, cancer, and diabetes. Certain mushrooms, such as shiitake, maitake, and reishi, contain compounds like beta-glucans that have been shown to enhance immune function and help the body fight infections.

7. **Protein-rich Foods:** Foods rich in protein, such as lean meats, poultry, eggs, and legumes, are excellent sources of high-quality protein as well as important nutrients like iron and zinc. They provide essential amino acids that are necessary for the production and function of immune cells.

Types of Food That Fight Infection in Human Body

Certain types of food can help boost the immune system and fight infections in the human body. These foods are often rich in vitamins, minerals, antioxidants, and other nutrients that support immune function. Here are some examples:

1. **Vitamin C – Citrus Fruits & Greens:** Consuming foods high in vitamin C such as grapefruits, oranges, tangerines, sweet red pepper, broccoli, strawberries, kale, and kiwifruit are thought to increase white blood cell production, which is key to fighting infection. Popular citrus fruits include: Grapefruit, Oranges, Clementines, Tangerines, Lemons and Limes.

2. **Garlic:** Garlic contains compounds that help the immune system fight germs in a variety of ways by stimulating cells important to fighting disease and helping to regulate the immune system. It helps boost the production of virus-fighting T-cells and can reduce the amount of stress hormones your body produces which can help keep your immune system functioning at full strength (Katherine, 2024).

3. **Water – Hydration & Immunity:** Water helps produce lymph which carries white blood cells and other immune system cells through the body. There are many foods with high water content such as cucumbers, watermelon, and celery. If you have a hard time drinking plain water, try a cup of green tea with lemon, watermelon, cucumber or mint-infused water for an immune system powerhouse beverage. Think of proper hydration as a way to make it easier for immune-boosting nutrients to get to where they need to go (cells) in your body.

4. **Shellfish**: Shellfish isn't what jumps to mind for many who are trying to boost their immune system, but some types of shellfish provide zinc, a nutrient that supports immune function. Varieties of shellfish that are high in zinc include: Oysters, Crab, Lobster and Mussels.

5. **Poultry:** Poultry, such as chicken and turkey, is high in vitamin B6. About 3 ounces of light turkey or chicken meat contains nearly one-thirdTrusted Source of your daily recommended amount of B6. Vitamin B6 is an important player in many of the chemical reactions that happen in the body (Cleverland, 2022). It's also vital to the formation of new and healthy red blood cells. Stock or broth made by boiling chicken bones contains gelatin, chondroitin, and other nutrients helpful for gut healing and immunity.

6. **Almonds:** Almonds are another excellent source of vitamin ETrusted Source. They also contain manganese, magnesium, and fiber. A small handful or a quarter of a cup of almonds is a healthful snack that may benefit the immune system.

7. **Green tea**: Green tea contains only a small amount of caffeine, so people can enjoy it as an alternative to black tea or coffee. Drinking it strengthens the immune system. Both green and black teas are packed with flavonoids, a type of antioxidant. Where green tea really excels is in its levels of epigallocatechin gallate (EGCG), another powerful antioxidant.

Specific nutrients and dietary strategies that enhance the body's immune response

Boosting immunity through Functional Food Optimization (FFO) involves utilizing specific nutrients and dietary strategies to enhance the body's immune response.

Nutrients and Immune Function: Certain nutrients play a crucial role in supporting immune function. For example, vitamin C found in citrus fruits and bell peppers helps stimulate the production of white blood cells, which are essential for fighting infections. Vitamin D, obtained from sunlight exposure and fortified foods, regulates immune responses and reduces inflammation. Zinc, found in nuts, seeds, and legumes, is involved in immune cell function and wound healing.

Antioxidants and Anti-inflammatory Compounds: Foods rich in antioxidants, such as berries, dark leafy greens, and nuts, help neutralize harmful free radicals and reduce oxidative stress, which can weaken the immune system. Anti-inflammatory compounds like omega-3 fatty acids found in fatty fish (e.g., salmon, sardines) and flaxseeds help modulate immune responses and promote a balanced inflammatory state.

Probiotics and Gut Health: The gut microbiota plays a crucial role in immune function. Probiotic-rich foods like yogurt, kefir, kimchi, and sauerkraut help maintain a healthy balance of gut bacteria, which in turn supports immune regulation and defense against pathogens.

Herbs and Spices: Certain herbs and spices have immune-boosting properties. For instance, garlic and ginger possess antimicrobial and anti-inflammatory properties, while turmeric contains curcumin, known for its antioxidant and immune-modulating effects.

Hydration and Immune Support: Staying hydrated is important for immune function as water helps transport nutrients and supports the elimination of toxins. Herbal teas, especially those containing ingredients like Echinacea or elderberry, may provide additional immune support.

Whole Foods vs. Processed Foods: Emphasizing whole, unprocessed foods in the diet, such as fruits, vegetables, whole grains, lean proteins, and healthy fats, provides a diverse array of nutrients that support immune health. In contrast, excessive consumption of processed foods high in sugar, unhealthy fats, and additives can weaken the immune system.

Balanced Diet and Moderation: A balanced diet that includes a variety of nutrient-dense foods ensures adequate intake of essential nutrients for immune function. Moderation is key, as excessive consumption of certain foods or nutrients may have negative effects on immune health.

Individual Variability: It's important to recognize that individual nutritional needs and responses vary based on factors such as age, genetics, underlying health conditions, and lifestyle. Customizing dietary recommendations to meet individual needs is essential for Epitomizing immune function.

The process of fighting infection and enhancing the body's immune response in human body

The immune system is a complex network of organs, cells and proteins that defends the body against infection, whilst protecting the body’s own cells. The immune system keeps a record of every germ (microbe) it has ever defeated so it can recognize and destroy the microbe quickly if it enters the body again. The human body possesses a complex and highly effective defense system to combat infections caused by pathogens such as bacteria, viruses, fungi, and parasites. This defense mechanism (Immune System) involves various components and stages, each playing a crucial role in protecting the body from harmful invaders (Better Health Channel, 2022). Here is an overview of the process of fighting infection in the human body:

Recognition of Pathogens: Pathogens are recognized by a variety of immune cells, such as macrophages and dendritic cells, via pathogen-associated molecular patterns (PAMPs) on the pathogen surface, which interact with complementary pattern-recognition receptors (PRRs) on the immune cells’ surfaces. PRRs identify molecular patterns specific to pathogens, triggering an immune response (Medical Libraries Text, 2022).

Activation of the Immune Response: Upon recognition of a pathogen, the immune system initiates an immune response. This involves the activation of immune cells, such as macrophages, dendritic cells, and T cells, which coordinate the body's defense mechanisms.

Inflammatory Response: The immune system triggers inflammation at the site of infection. This response serves to contain and eliminate the invading pathogens, recruit immune cells to the site of infection, and initiate tissue repair processes.

Phagocytosis: Phagocytes, including neutrophils and macrophages, engulf and destroy pathogens through a process called phagocytosis. Once engulfed, pathogens are broken down and destroyed within specialized compartments within the phagocytes.

Antigen Presentation: APCs process and present fragments of pathogens, known as antigens, to T cells. This interaction activates T cells, which play a central role in orchestrating the immune response by releasing cytokines and coordinating the activities of other immune cells.

Adaptive Immune Response: The adaptive immune system, which includes B cells and T cells, generates specific immune responses tailored to the invading pathogen. B cells produce antibodies that bind to and neutralize pathogens, while T cells directly target and destroy infected cells.

Memory Response: Following the resolution of an infection, memory cells are generated within the adaptive immune system. These memory cells "remember" specific pathogens encountered in the past, enabling a faster and more robust immune response upon re-exposure to the same pathogen in the future.

Resolution of Infection: As the immune response progresses, the invading pathogens are cleared from the body. Immune cells work in concert to eliminate the infection while minimizing damage to healthy tissues.

Regulation of Immune Response: Throughout the process of fighting infection, the immune system maintains a delicate balance between eliminating pathogens and preventing excessive inflammation and tissue damage. Regulatory immune cells, such as regulatory T cells, help modulate the immune response to prevent immunopathology.

Recovery and Healing: Once the infection is successfully cleared, the body undergoes a process of tissue repair and healing. This may involve the regeneration of damaged tissues and the resolution of inflammation.

METHODOLOGY

In carrying out the study, descriptive survey design was adopted for this study. The study was carried out in Akwa Ibom State. The targeted population for the study comprised all medical personnels and microbiologists in Akwa Ibom State. A stratified random sampling technique was used to select 30 medical personnel, 10 from each of the three senatorial districts in Akwa Ibom and 15 microbiologists, 5 from each senatorial districts in the State, which gave a total of 135 respondents used for the study. The instrument used for data collection was a structured questionnaire titled “Immunity and Food Wellness Questionnaire (IFWQ)”. Face and content validation of the instrument was carried out by an expert in test, measurement, and evaluation in order to ensure that the instrument has the accuracy, appropriateness, and completeness for the study under consideration. The reliability coefficient obtained was 0.88, and this was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical technique such percentage analysis to answer research questions.

Research Questions 1: The research question sought to find out the types of food that boost immunity and fight infections in human body consumed by the people in AKS. To answer the research question, percentage analysis was performed on the data, (see table 1).

Table 1: Percentage analysis of the types of food that boost immunity and fight infections in human body consumed by the people in Akwa Ibom State

FOOD TYPES	FREQUENCY	PERCENTAGE (%)
Vitamin C- Citrus Fruits	**68**	**12.45**
Garlic-T-Cell Booster	**56**	**10.26**
Yoghurt	**44**	**8.06**

Beta-Carotene – Leafy Greens	**52**	**9.53**
Turmeric	**12**	**2.20**
Mushrooms	**20**	**3.66**
Protein-rich Foods	**82**	**15.02**
Water – Hydration & Immunity	**120**	**21.98****
Shellfish	**60**	**10.99**
Almonds	**4**	**0.73***
Green tea	**28**	**5.13**
TOTAL	**546**	**100%**

**** The highest percentage frequency**

*** The least percentage frequency**

SOURCE: Field Survey

The above table 1 presents the percentage analysis of the types of food that boost immunity and fight infections in human body consumed by the people in Akwa Ibom State. From the result of the data analysis, it was observed that the food type tagged "Water-Hydration and Immunity" 120(21.98) was rated as the highest the types of food that boost immunity and fight infections in human body consumed by the residents in Akwa Ibom State, while "Almonds" 4(0.73) was rated as the least. This Findings correlates with the findings and opinions of UC Health,2020 which stated in its opinion, that water helps produce lymph which carries white blood cells and other immune system cells through the body and that there are many foods with high water content such as cucumbers, watermelon, and celery.

Research Questions 2: The research question sought to find out the extent of frequency of Akwa Ibom resident's consumption of food that boost immunity and fight infections in human body. To answer the research question, percentage analysis was performed on the data, (see table 2).

Table 2: Percentage analysis of the extent of frequency of Akwa Ibom resident's consumption of food that boost immunity and fight infections in human body

EXTENT	FREQUENCY	PERCENTAGE (%)
Very High Extent	**42**	**31.11****
High Extent	**36**	**26.67**
Low Extent	**32**	**23.70**
Very Low Extent	**25**	**18.52***
TOTAL	**135**	**100%**

**** The highest percentage frequency**

*** The least percentage frequency**

SOURCE: Field Survey

The above table 2 presents the percentage analysis of the extent of frequency of Akwa Ibom resident's consumption of food that boost immunity and fight infections in human body. From the result of the data analysis, it was observed that the highest percentage of the respondents 42(31.11) mentioned that to a "Very high extent" of Akwa Ibom residents consume food that boost immunity and fight infections in human body, while the least respondents 25 (18.52%)

affirmed the extent to be “Very low”. This finding aligns with the opinions of Vendatu (2024) who opined that food is all those essential substances which human consume for conducting and regulating the biological activities and that it gives all living thing the energy to perform their day-to-day activities, meaning that food is vital because without it, living things cannot thrive and that the body is kept healthy and protected from sickness by food.

CONCLUSION

The investigation of foods that boost immunity and fight infections in human bodies holds immense promise for advancing humans understanding of preventive health strategies. By harnessing the power of nutrition to enhance immune resilience, humans have the potential to reduce the burden of infectious diseases and promote health and well-being across populations. Through interdisciplinary collaboration and ongoing public health efforts, eventually people can harness the preventive power of food to build a healthier, more resilient society. Finally, Akwa Ibom State residents consume water more than any other type of food that to boost immunity and fight infections. Also the people consume food that boost immunity and fight infections in their bodies to very high extent.

RECOMMENDATIONS

1. By implementing these, researchers can advance their understanding of the complex relationship between food and immunity, ultimately contributing to the development of evidence-based dietary interventions that enhance infection resistance and promote overall health and well-being.
2. Through continued collaboration, innovation, and education, people can harness the preventive power of nutrition to strengthen immune resilience and mitigate the global burden of infectious diseases.
3. It is imperative to translate scientific findings into practical recommendations that empower individuals to make informed dietary choices and cultivate lifelong immunity.
4. To establish a clearer understanding of the effects of specific foods and nutrients on immune function, researchers should prioritize conducting well-designed clinical trials.

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